Agriculture and Food Research Initiative Competitive Grant Program

Water for Agriculture Challenge Area

FY2015Request for Applications

LETTER OF INTENT DEADLINE: April 9, 2015

APPLICATION DEADLINE: July 16, 2015

ELIGIBILITY: See Part III, A of RFA

USDA United States Department of Agriculture   National Institute of Food and Agriculture

NATIONAL INSTITUTE OF FOOD AND AGRICULTURE; U.S. DEPARTMENT OF AGRICULTURE

AGRICULTURE AND FOOD RESEARCH INITIATIVE
COMPETITIVE GRANTS PROGRAM
WATER FOR AGRICULTURE CHALLENGE AREA

INITIAL ANNOUNCEMENT

CATALOG OF FEDERAL DOMESTIC ASSISTANCE: This program is listed in the Catalog of Federal Domestic Assistance under **10.310**.

DATES: Letters of Intent must be received by **5:00 p.m. Eastern Time** on **April 9, 2015.** Applications must be received by **5:00 p.m. Eastern Time** on **July 16, 2015.** Applications received after this deadline will normally not be considered for funding (see Part IV, D. of this request for applications (RFA)). Comments regarding this RFA are requested within 6 months from the issuance of this notice. Comments received after that date will be considered to the extent practicable.

STAKEHOLDER INPUT: The National Institute of Food and Agriculture (NIFA) seeks your comments about this RFA. We will consider the comments when we develop the next RFA for the program, if applicable, and we'll use them to meet the requirements of section 103(c)(2) of the Agricultural Research, Extension, and Education Reform Act of 1998 (7 U.S.C. 7613(c)(2)). Submit written stakeholder comments by the deadline set forth in the DATES portion of this Notice to: Policy@nifa.usda.gov. (This e-mail address is intended only for receiving comments regarding this RFA and not requesting information or forms.) In your comments, please state that you are responding to the Agriculture and Food Research Initiative Water for Agriculture Challenge Area RFA.

As part of the National Institute of Food and Agriculture's (NIFA) strategy to successfully implement the 2014 Farm Bill, NIFA is soliciting stakeholder input on NIFA's centers of excellence (COE) strategy. Between January and March 2015 NIFA will hold webinars to collect stakeholder input about the centers of excellence strategy in fiscal year (FY) 2015. Upcoming dates for the webinars will be announced on the NIFA website. The full transcript of the webinars will also be available on the NIFA website. NIFA will also request to receive input through an advertised call-in number, fax and email. All comments and suggestions for the FY 2015 centers of excellence should be received by March 30, 2015.

EXECUTIVE SUMMARY: The U.S. Department of Agriculture (USDA) established the Agriculture and Food Research Initiative (AFRI) under which the Secretary of Agriculture may make competitive grants for fundamental and applied research, education, and extension to address food and agricultural sciences (as defined under section 1404 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (NARETPA) (7 U.S.C. 3103)), as amended, in six priority areas. The six priority areas include: 1) plant health and production and plant products; 2) animal health and production and animal products; 3) food

safety, nutrition, and health; 4) renewable energy, natural resources, and environment; 5) agriculture systems and technology; and 6) agriculture economics and rural communities.

NIFA anticipates $30 million will be available to support the AFRI Water for Agriculture Challenge Area program designed to help solve critical water problems in rural and agricultural watersheds across the United States (FY 2014 – FY 2018). Future (over next 3 years) research, education and extension areas that may be supported by the Water for Agriculture Program are found on page 5 of this RFA.

In FY 2015 approximately $9 million will be available in support of new awards for this program. Funding of projects beyond FY 2015 is contingent upon the availability of funds, and the best interests of the U.S. government. Funding in FY 2015 does not obligate NIFA to any future-year commitments.

This notice identifies the objectives for Water for Agriculture projects, eligibility criteria for projects and applicants, and the application forms and associated instructions needed to apply. Project types supported by AFRI within this Challenge Area are multi-function Integrated Research, Education, and/or Extension Projects, Food and Agricultural Science Enhancement (FASE) Grants, and conferences. This RFA identifies program objectives, eligibility criteria, and matching requirements for each project type.

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PART I—FUNDING OPPORTUNITY DESCRIPTION

A. Legislative Authority and Background

Section 7404 of the Food, Conservation, and Energy Act of 2014 (FCEA) (Pub. L. 110-246) amends section 2(b) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(b)) to authorize the Secretary of Agriculture to establish the Agriculture and Food Research Initiative (AFRI), a competitive grant program that will provide funding for fundamental and applied research, education, and extension to address food and agricultural sciences. The legislation directed the Secretary to award grants to address priorities in United States agriculture in the following areas:

1. Plant health and production and plant products;
2. Animal health and production and animal products;
3. Food safety, nutrition, and health;
4. Bioenergy, natural resources, and environment;
5. Agriculture systems and technology; and
6. Agriculture economics and rural communities.

To the maximum extent practicable, NIFA, in coordination with the Under Secretary for Research, Education, and Economics (REE), will make grants for high priority research, education, and extension, taking into consideration, when available, the determinations made by the National Agricultural Research, Extension, Education, and Economics Advisory Board (NAREEEAB) pursuant to section 2(b)(10) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(b)(10)), as amended. The authority to carry out this program has been delegated to NIFA through the Under Secretary for REE.

B. Purpose and Priorities

The purpose of AFRI is to support research, education, and extension work by awarding grants that address key problems of national, regional, and multi-state importance in sustaining all components of food and agriculture, including farm efficiency and profitability, ranching, renewable energy, forestry (both urban and agroforestry), aquaculture, rural communities and entrepreneurship, human nutrition, food safety, physical and social sciences, home economics and rural human ecology, biotechnology, and conventional breeding. Through this support, AFRI advances knowledge in both fundamental and applied sciences that is important to agriculture. It also allows AFRI to support education and extension activities that deliver science-based knowledge to people, allowing them to make informed practical decisions. This AFRI RFA is announcing funding opportunities for integrated research, education, and/or extension projects.

AFRI is intended to promote advances in U.S. agriculture and forestry. Agriculture, however, is increasingly worldwide in scope and reach. To attain AFRI's goals for U.S. agriculture global competence of our nation's workforce, applicants to Foundational or Challenge Area RFAs are encouraged to include international partnerships or engagement in proposals as appropriate.

Applicants are asked to keep in mind that while international activities supported by AFRI may contribute to Food Security as described in the U.S. Government's Feed the Future Food Security initiative (www.feedthefuture.gov), **any international activity proposed under AFRI such as partnerships, exchanges, training, trips, etc., must first and foremost support AFRI's domestic program goals.** Applicants must clearly describe and demonstrate how international activities proposed in applications submitted to AFRI will contribute to and support advances in American agriculture.

If international activities (*e.g.,* partnerships, exchanges, travel, etc.) are proposed, applicants must describe indicators that will be used to assess those activities. Appropriate indicators include but are not limited to those posted at the U.S. Government's Feed the Future global food security initiative Web site (www.feedthefuture.gov/progress). Additional guidance and suggested examples for possible international partnerships linked to this AFRI RFA are provided in the AFRI Water for Agriculture Challenge Area Frequently Asked Questions (FAQs) (http://www.nifa.usda.gov/funding/afri/afri_faq_webinars.html). The contact for questions regarding global engagement is Michael McGirr (mmcgirr@nifa.usda.gov) or (202) 205-3739.

Supporting the many components of agriculture under the constraints of a growing population, pressure on natural resources, and the challenges of climate variability and change, requires research, education, extension, and integrated programs that increase agricultural and natural resource sustainability. The term "sustainable agriculture" (NARETPA, 7 U.S.C. 3103) means an integrated system of plant and animal production practices having a site-specific application that will over the long-term achieve the following goals: 1) satisfy human food and fiber needs; 2) enhance environmental quality and the natural resource base upon which the agriculture economy depends; 3) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; 4) sustain the economic viability of farm operations; and 5) enhance the quality of life for farmers and society as a whole.

In response to the requirements for a sustainable agriculture in the U.S., NIFA is soliciting applications for the 2015 Water for Agriculture Challenge Area Program in the following program priority areas:

1) Water Availability for Diverse Agricultural Uses: The Right Water for the Right Place and Times;
2) Understanding Decisions and Behaviors Connected with Agriculture and Post-harvest Processing Industry Water Use; and
3) Understanding the Human Health Impacts to Exposure from Nontraditional Water Used in Agriculture.

Stakeholder Input

For information on stakeholder input related to AFRI and the Water for Agriculture Challenge Area, please visit http://www.nifa.usda.gov/funding/afri/afri.html.

Background

AFRI is one of NIFA's major programs through which to address critical societal issues such as those laid out in the *New Biology for the 21st Century: Ensuring the United States Leads the Coming Revolution* report. USDA leadership has integrated the six AFRI priority areas (outlined in Part I, A) with the four challenges and the approach laid out in the "New Biology for the 21st Century" report to identify six primary challenge areas around which to structure the AFRI program and begin to focus the Department's investment in enabling an integrated approach to biological research, education, and extension. USDA science will support the following challenges:

1. Keep American agriculture competitive while ending world hunger
2. Improve nutrition and end child obesity
3. Improve food safety for all Americans
4. Secure America's energy future through bioenergy production
5. Mitigation and adaptation of agriculture to climate variability and change
6. Solve critical water resource problems in rural and agricultural watersheds across the United States

The AFRI Water for Agriculture Challenge Area for 2015 is aligned with Section 7404, Subsection (b) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(b)) as amended by the 2014 Farm Bills under the following Priority Areas: (D) BIOENERGY, NATURAL RESOURCES, AND ENVIRONMENT. - Natural resources and the environment, including--(i) fundamental structures and functions of ecosystems; (ii) biological and physical bases of sustainable production systems; (iii) minimizing soil and water losses and sustaining surface water and ground water quality; (iv) the effectiveness of conservation practices and technologies designed to address nutrient losses and improve water quality; (v) global climate effects on agriculture; and (vi) forestry.

Water for Agriculture also aligns with USDA Strategic Goal 2: Ensure Our National Forests And Private Working Lands Are Conserved, Restored, And Made More Resilient To Climate Change, While Enhancing Our Water Resources, Objective 2.1-Improve the Health of the Nation's Forests, Grasslands and Working Lands by Managing Natural Resources; Objective 2.2- Lead Efforts to Mitigate and Adapt to Climate Change, Drought, and Extreme Weather in Agriculture and Forestry; and Objective 2.3 – Contribute to Clean and Abundant Water by Protecting and Enhancing Water Resources in National Forests and on Working Lands.

Water for Agriculture also aligns principally with NIFA Strategic Goal 1: Science--Catalyze exemplary and relevant research, education and extension programs, Sub-goal 1.1: Advance our Nation's ability to achieve global food security and fight hunger; Sub-goal 1.2: Advance the development and delivery of science for agricultural, forest, and rangeland systems adapted to climate variability and to mitigate climate impacts; Sub-goal 1.3: Optimize the production of goods and services from working lands while protecting the Nation's natural resource base and environment; Sub-goal 1.4: Contribute to U.S. energy independence and enhance other agricultural systems through the development of regional systems for the sustainable production

of optimal biomass (forests, rangelands and crops) for the production of bioenergy and value-added bio-based industrial products; and Sub-goal 1.6: Reduce the incidence of food-borne illness and provide a safer food supply.

AFRI Water for Agriculture Challenge Area aligns with the 2012 USDA Research, Education, and Economics (REE) Action Plan (see http://www.ree.usda.gov/ree/news/USDA_REE_Action_Plan_03-2014.pdf). The AFRI Water for Agriculture Challenge Area specifically addresses REE Action Plan Goal 3 (Sustainable Use of Natural Resources) and is supportive of subgoal 3A (Water Availability: Quality and Quantity). The AFRI Water for Agriculture Challenge Area draws from the subgoal and some specific actionable items defined in the REE Action Plan, but not all items defined by the action plan are addressed by this year's RFA. Several action items are addressed by other AFRI RFAs, such as the Foundational Program RFA. NIFA may also solicit applications for AFRI funds through other announcements, including supplemental AFRI RFAs or RFAs issued in conjunction with other federal agencies. Such announcements will be made public in the same manner as this announcement.

Water for Agriculture Challenge Area

In Fiscal Year (FY) 2015, AFRI NIFA Water for Agriculture RFA focuses on solutions for conserving higher quality water and understanding the human behavior and its influence on decision making for agricultural water use. Continued significant variations from the historical rate of water supply, demand and quality are projected to have major impacts on agricultural, forest, and rangeland production systems. This program area within AFRI will be coordinated with and leverage efforts in the Agricultural Production and Climate Change and Sustainable Bioenergy challenge areas, and help solve critical water problems in agricultural, rural and urbanizing areas across the United States. The program will focus on developing solutions for water management that link food, water, climate, energy, and environmental issues. Funding will be used to develop management practices, technologies, and tools for farmers, ranchers, forest owners and managers, public decision-makers, public and private managers and citizens to improve water resource quantity and quality. NIFA's approach will link social, economic, and behavioral sciences with traditional biophysical sciences and engineering to address regional scale issues with shared hydrological processes, and meteorological and basin characteristics.

For the next three fiscal years, NIFA's *Water for Agriculture* portfolio will further its goal of tackling critical water issues by developing both regional systems for the sustainable use and reuse, flow and management of water, and at the watershed and farm scales, water issues focused on production and environmental sustainability efforts. Following successful project establishment in Fiscal Years 14 and 15, *Water for Agriculture* will continue to provide funding to help solve issues of water availability (quality + quantity) for agriculture use while maintaining environmental quality. Depending upon available funds, the *Water for Agriculture* program may expand its focus during the next three years to include program area priorities that address drought, flood and excess moisture preparedness, mitigation and adaptation; research and technology development into evaluating and mitigating the effects of nanoparticles/chemicals/pathogens of emerging concern in freshwater and nontraditional waters

(e.g., recycled, brackish, return flow, etc.); and the ability to provide incentives for behavior change/adoption of water use/conservation practices.

C. Program Area Description

1. Water Availability for Diverse Agricultural Uses: The Right Water for the Right Place and Time.

Program Area Priority Code – A8101
Letter of Intent (LOI) Deadline – April 9, 2015, (5:00 p.m., Eastern Time), see Part IV, A for instructions.
Application Deadline – July 16, 2015 (5:00 p.m., Eastern Time)
Proposed Budget Requests –
- Coordinated Agricultural Project (CAP) Grants **must not exceed $2.5 million per year, including indirect costs, for project periods of up to four years ($10 million total per project)**. The program anticipates making up to two awards in FY 2015.
- Conference and Food and Agricultural Science Enhancement (FASE) Grants must adhere to the guidelines outlined beginning in Part II, D.
- Requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Integrated Projects
Requested Grant Type – CAP, Conference, and FASE Grants
Program Area Priority Contact – James Dobrowolski, National Program Leader (jdobrowolski@nifa.usda.gov)
Applicants MUST USE This Program Area Priority e-mail for Submission of Letter of Intent – waterforag@nifa.usda.gov

Program Area Priority – Applicants must address the following:
Changes in agricultural water supply, use and quality due to climate extremes, community needs and land use changes requires the development of innovative new science and technologies focused on widening the array of choices for conserving water and sustaining water quality for different uses at multiple scales. Water is an important element for crop and animal production and processing, however the water quality needed for various on- and off-farm uses can vary. For example, water used for irrigation of fresh produce prior to harvest would require a higher quality of water due to food safety concerns. Considerations of water quality appropriate for the specific use, time of application, and where water is applied are important in developing solutions for conserving higher quality water.

The goal of this program priority is to conserve water through the development of cost-effective, adoptable and sustainable practices and technologies for agricultural producers and processors. Proposals addressing this program priority must include a systems approach at the watershed or regional scale that links social, economic, and behavioral sciences with biophysical sciences and engineering. All applicants are highly encouraged to read this program's FAQs located at http://www.nifa.usda.gov/funding/afri/afri_faq_webinars.html.

Applicants must address one or more of the following:

- How can water be reused on the farm and in nearby communities for agricultural production and processing? What nontraditional (recycled, brackish, desalinated) sources of water are available for agricultural production that conserves groundwater sources?
- What technologies and training are needed to assist agricultural producers and processors identify the "right water" for the specific use, timing and location?
- What water treatment technologies can be developed or adapted to agriculture and be effective, economical and sustainable for supplying the "right water" for agricultural production and processing?
- How can agricultural production and processing practices be improved to more efficiently use and conserve water, and be less polluting?
- What scientific information is necessary for appropriate institutional, policy, regulatory, and governance decisions that will secure water for agriculture at the watershed or regional scales to meet diverse and conflicting water needs?
- How will new knowledge and action necessary to solve water problems be communicated to agricultural and nonagricultural water users?

Program Area Priority Additional Information:

- Where applicable, technologies and practices developed in response to this RFA must be appropriate for all agricultural producers and processors, including small to medium sized operations.
- Projects should be multi-disciplinary, linking the biophysical sciences, engineering, and geospatial, social, economic, and behavioral sciences in order to enable production improvements and behavioral changes promoting adoption of new technologies that sustain the quantity, quality, and availability of water for agriculture.
- Projects must include a data management plan **as part of the overall project management plan** that includes making data publically available and/or compatible with other open databases. A budget allocation must be included for the data management plan.
- Applications from and collaborations with minority-serving institutions are strongly encouraged.
- Collaboration with international partners is encouraged when appropriate; however, applications must be submitted by eligible U.S. institutions.

2. Understanding Decisions and Behaviors Connected with Agriculture and Post-harvest Processing Industry Water Use

Program Area Priority Code – A8102
Letter of Intent Deadline – April 9, 2015, (5:00 p.m., Eastern Time), see Part IV, A for instructions.
Application Deadline – July 16, 2015 (5:00 p.m., Eastern Time)
Proposed Budget Requests –

- Standard Grants **must not exceed $500,000 total per project, for project periods of up to four years**. The program anticipates making up to four new awards in FY 2015.
- Conference and Food and Agricultural Science Enhancement (FASE) Grants must adhere to the guidelines outlined beginning in Part II, D.
- Requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Standard Research Projects
Requested Grant Type – Standard, Conference, and FASE Grants
Program Area Priority Contact – James Dobrowolski, National Program Leader (jdobrowolski@nifa.usda.gov)
Applicants MUST USE This Program Area Priority e-mail for Submission of Letter of Intent – waterforag@nifa.usda.gov

Program Area Priority--As competition for water use intensifies, individual, organizational and societal behaviors and institutional drivers will play important roles in determining how limited water resources are used. Interdisciplinary collaboration can bring to bear new ideas and technologies and lead to breakthroughs in our understanding of human behavior and decision-making, giving decision makers greater capacity to manage the changing availability of water. Knowledge about the value of water to different users, motivations to buy, sell or trade, and methods to evaluate the biophysical, economic, ecological, and social tradeoffs for allocating water among competing uses is vital to water policy-making. If we understood the key factors influencing decision-making and the behaviors that drive water use, decision makers could affect water-use decisions and ultimately alter consumption. Key to better decision-making is an enhanced understanding of the determinants of water use--so that better predictions of water use can serve as an informed and rational basis for water planning. Factors affecting water use include new technologies, water market structures, institutions and laws, economic conditions (including the cost of energy and prices of the various inputs and outputs of water intensive activities), and public attitudes and education. **The overall goal of this program is to understand decisions and behaviors of agricultural producers and the crop processing industry connected with water use**. To improve water availability through the understanding of human behavior, the potential for technology adoption and improved decision-making and give decision makers greater capacity to manage water for agriculture, the **successful project(s) must focus on significant watershed and /or regional scales with shared water governance, hydrological processes, and meteorological and basin characteristics**.

Applicants must address one or more of the following:

- How do individual, community, organization, and societal responses to changes in water price (including pricing water by volume, quality, and timing of use), water availability, or the loss of a specific source of water, shape decisions and behaviors regarding water use?
- How can we better understand and predict changes in water use behavior with governmental incentives and regulations, including eliminating or reducing subsidies for water and incorporating external costs?
- What are the barriers or disincentives to adoption of enhanced water use technologies, and what information or public education is needed to overcome these barriers and

encourage the acceptance of these technologies? What are the consequences of changing behavior towards enhanced water use technologies?

- What kinds of institutional reforms might be developed that create an environment for encouraging water trading? What are the efficiency and equity implications of policy or institutional reforms? What role do third-parties play in inhibiting trades between rural and urban uses and how might those effects be mitigated?

Program Area Priority Additional Information:

- Standard grants are research-only, but there is an expectation that projects must be stakeholder driven when developing the research and in implementing, planning and evaluating project activities.
- Projects must include a data management plan that includes making data publically available and/or compatible with other open databases. A budget allocation must be included for the data management plan.

3. Understanding the Human Health Impacts to Exposure from Nontraditional Water Used in Agriculture

Program Area Priority Code – A8103
Letter of Intent Deadline – April 9, 2015, (5:00 p.m., Eastern Time), see Part IV, A for instructions.
Application Deadline – July 16, 2015 (5:00 p.m., Eastern Time)
Proposed Budget Requests –
- Standard Grants must not exceed **must not exceed $500,000 total per project, for project periods of up to four years**. The program anticipates making up to six new awards in FY 2015.
- Conference and Food and Agricultural Science Enhancement (FASE) Grants must adhere to the guidelines outlined beginning in Part II, D.
- Requests exceeding the budgetary guidelines will not be reviewed.
Requested Project Type – Standard <u>Integrated</u> Projects
Requested Grant Type – Standard, Conference, and FASE Grants
Program Area Priority Contact – James Dobrowolski, National Program Leader (jdobrowolski@nifa.usda.gov)
Applicants MUST USE This Program Area Priority e-mail for Submission of Letter of Intent – waterforag@nifa.usda.gov

Program Area Priority:
In an effort to expand the scope of this program, NIFA and the U.S. Environmental Protection Agency (EPA) (U.S. Environmental Protection Agency (EPA) National Center for Environmental Research) are initiating a collaborative, interagency research program to better understand and communicate the human health impacts of nontraditional agricultural water sources in rural, urbanizing and urban agricultural settings.

Water availability challenges in agriculture are often mitigated by using nontraditional water sources―such as treated human and agricultural wastewater, agricultural return flows, and saline or brackish waters. Benefits derived from using nontraditional water for agriculture include improved reliability of supply to meet competing demands (especially during drought), the addition of valuable nutrients, and reduced cost. Barriers to the use of these novel water sources include the potential degradation of natural resources, public perceptions linked to nontraditional water use, human health concerns in relation to consumption of and contact with contaminated water, and standards and guidelines that differ among states for agricultural uses. Interdisciplinary collaboration can lead to sustainable solutions for water challenges and a better understanding of the potential health impacts of nontraditional water uses in agricultural communities.

The **goal of this program priority area is to fund a portfolio of research that improves our understanding of the human exposure pathways to nontraditional agricultural water and potential human health risks**. To improve water quality through the understanding of the agricultural use of nontraditional waters and potential human health exposures and risks, the **successful project(s) must focus on significant farm and watershed scales with shared water governance, hydrological processes, and watershed characteristics and must engage the affected community members and stakeholders**.

Applicants must address the following:
- Considering all water uses, times and purposes: What are the chemical contaminants of human health concern in nontraditional agricultural water, what is the nature and extent of the contaminants, what are the human exposure pathways, what are the health risks associated with nontraditional agricultural water uses, and how might any potential risks be reduced or mitigated?
- How can this research be translated to communities and decision makers to communicate research findings, and inform decisions concerning community health, in the context of nontraditional agricultural water uses.

Program Area Priority Additional Information:
- Engagement with community groups and collaborative interaction and involvement with the affected community members and stakeholders during the proposal development and through the life of the project. Applicants must develop research using a Community Engaged Research Framework (CEnRF). Information for CERF can be found in the FAQs page for this RFA--http://www.nifa.usda.gov/funding/afri/afri_faq_webinars.html.

- Projects must include a data management plan that includes making data publically available and/or compatible with other open databases. A budget allocation must be included for the data management plan.

- Human Subjects Research Requirements: This EPA program priority area provides the opportunity for the submission of applications for projects that may involve human subjects research. Human subjects research supported by the EPA is governed by EPA Regulation 40 CFR Part 26 (Protection of Human Subjects). This includes the Common Rule at subpart A and prohibitions and additional protections for pregnant women and

fetuses, nursing women, and children at subparts B, C, and D. Research meeting the regulatory definition of intentional exposure research found in subpart B is prohibited by that subpart in pregnant women, nursing women, and children. Research meeting the regulatory definition of observational research found in subparts C and D is subject to the additional protections found in those subparts for pregnant women and fetuses (subpart C) and children (subpart D). All applications must include a Human Subjects Research Statement (HSRS, as described in Appendix A on this RFA), and if the project involves human subjects research, it will be subject to an additional level of EPA review prior to funding decisions being made as described in Appendix A. The additional level of review is conducted by the EPA Human Subjects Research Review Official (HSRRO). In making a determination about conditional and later final approval, the HSRRO will apply both EPA Regulation 40 CFR 26 and EPA Policy Order 1000.17 Change A1, where human exposure research is interpreted as any intervention that manipulates subjects' environment (i.e., modifies subjects' exposure). Surveys, interviews, and focus groups with individuals may constitute human subjects research.

For more specific information including guidance and training, see:
http://www.epa.gov/osainter/phre/support.htm
http://www.epa.gov/osa/pdfs/phre/phre_course/index.htm.

PART II—AWARD INFORMATION

A. Available Funding

In FY 2015, approximately $9 million will be made available to support new awards within the AFRI Water for Agriculture Challenge Area.

NIFA anticipates $30 million will be available to support the AFRI Water for Agriculture Challenge Area program designed to help solve critical water problems in rural and agricultural watersheds across the United States for projects up to five years (FY 2014 – FY 2018).

Funding of projects beyond FY 2015 is contingent upon the availability of funds, and the best interests of the US government. Funding in FY 2015 does not obligate NIFA to any future-year commitments.

The amount available to support the AFRI program in FY 2015 will be approximately $325 million. Of this amount, no less than 30 percent will be made available to fund integrated research, education, and extension projects. Of the AFRI funds allocated to research activities, section 7406 of the FCEA directs 60 percent toward grants for fundamental (or basic) research and 40 percent toward grants for applied research. Of the AFRI funds allocated to fundamental research, not less than 30 percent will be directed toward research by multidisciplinary teams. It is anticipated that no less than 10 percent of the FY 2015 funds will be made available for Food and Agricultural Science Enhancement (FASE) Grants, and no more than two percent of the funds available for fundamental research will be made available for Equipment Grants.

There is no commitment by USDA to fund any particular application or to make a specific number of awards.

Awards issued as a result of this RFA will have designated the Automated Standard Applications for Payment System (ASAP), operated by the Department of Treasury's Financial Management Service, as the payment system for funds. For more information see http://www.nifa.usda.gov/business/method_of_payment.html.

B. Types of Applications

In FY 2015 you may submit applications to the Water for Agriculture Challenge Area as one of the following four types of requests:

(1) New application. This is a project application that has not been previously submitted to the Water for Agriculture Challenge Area Program. We will review all new applications competitively using the selection process and evaluation criteria described in Part V—Application Review Requirements.

(2) Renewal application. This is a project application that requests additional funding for a project beyond the period that was approved in an original or amended award. Applications for

renewed funding must contain the same information as required for new applications; they also must contain a Progress Report (see Project Narrative, Part IV). Renewal applications must be received by the relevant due dates, will be evaluated in competition with other pending applications in the area to which they are assigned, and will be reviewed according to the same evaluation criteria as new applications.

(3) Resubmitted application. This is an application that had previously been submitted to the Water for Agriculture Challenge Area Program but not funded. Project Directors (PDs) must respond to the previous review panel summary (see Response to Previous Review, Part IV). Resubmitted applications must be received by the relevant due dates, will be evaluated in competition with other pending applications in appropriate area to which they are assigned, and will be reviewed according to the same evaluation criteria as new applications.

(4) Resubmitted renewal application. This is a project application that requests additional funding for a project beyond the period that was approved in the original award. In addition, this is an application that had previously been submitted for renewal to the Water for Agriculture Challenge Area Program but not funded. Therefore, PDs must provide a Progress Report as required under the Project Narrative, Part IV, and must respond to the previous review panel summary as required under Response to Previous Review, Part IV. Resubmitted renewal applications must be received by the relevant due dates, will be evaluated in competition with other pending applications in the areas to which they are assigned, and will be reviewed according to the same evaluation criteria as new applications.

C. Project Types

Applications must propose one of the project types specified with the Program Area(s) and select the appropriate grant type for the application within the constraints of the grant types solicited. The project and grant types solicited in the AFRI Water for Agriculture Challenge Area are indicated in the table below and described in the Program Area Description beginning in Part I, C.

Project and Grant Types Solicited by the Water for Agriculture Challenge Area												
		Grant Type										
						Food and Agricultural Science Enhancement (FASE) Grants[1]						
		Standard	CAP	Other (Collabora-tive)	Conference	New Investigator	Strengthening Grants					
							Sabbatical	Equipment	Seed	Standard	CAP	Conference
Project Type	Research	✔			✔	✔	✔	✔	✔	✔	✔	✔
	Education						✔	✔	✔			
	Extension						✔	✔	✔			
	Integrated[2]	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔

[1] FASE Grants have special eligibility requirements. Refer to Part II, D. 3 for eligibility and additional information.
[2] Incorporates a minimum of two of the three components (Research, Education and Extension).

Integrated Research, Education, and/or Extension Projects

An Integrated Project includes at least **two** of the three functions of the agricultural knowledge system (*i.e.*, research, education, and extension) within a project, focused around a problem or issue. The functions addressed in the project should be interwoven throughout the life of the project and act to complement and reinforce one another. The functions should be interdependent and necessary for the success of the project and <u>no more than two-thirds of the project's budget may be focused on a single component</u>.

   a) The proposed **research** component of an integrated project should address knowledge gaps that are critical to the development of practices and programs to address the stated problem.

   b) The proposed **education** (teaching and teaching-related) component of an Integrated Project should develop human capital relevant to overall program goals for U.S. agriculture. An education or teaching activity is formal classroom instruction, laboratory instruction, and practicum experience in the food and agricultural sciences and other related matters such as faculty development, student recruitment and services, curriculum development, instructional materials and equipment, and innovative teaching methodologies.

   Educational activities may include any of the following: conducting classroom and laboratory instruction and practicum experience; faculty research internships for curricula development; cutting-edge agricultural science and technology curriculum development; innovative teaching methodologies; instructional materials development; education delivery systems; student experiential learning (student led-research; internships; externships; clinics); student learning styles and student-centered instruction; student recruitment and retention efforts; career planning materials and counseling; pedagogy; faculty development programs; development of modules for on-the-job training; providing knowledge and skills for professionals creating policy or transferring to the agriculture workforce; faculty and student exchanges; and student study abroad and international research opportunities relevant to overall program goals for U.S. agriculture. Educational activities must show direct alignment with increasing technical competency in AFRI priority area(s) to ensure that U.S. agriculture remains globally competitive in the knowledge age.

   Educational components must address one or two of the following key strategic actions:
   - Train students for Associate, Baccalaureate, Master's or Doctoral degrees; and/or
   - Prepare K-12 teachers and higher education faculty to understand and present food and agricultural sciences.

   These projects should synthesize and incorporate a wide range of the latest relevant research results. Note that routine use of graduate students and postdoctoral personnel to conduct research is not considered education for the purposes of this program.

c) The proposed **extension** component of an Integrated Project should conduct programs and activities that deliver science-based knowledge and informal educational programs to people, enabling them to make practical decisions. Program delivery may range from community-based to national audiences and use communication methods from face-to-face to electronic or combinations thereof. Extension Projects may also include related matters such as certification programs, in-service training, client recruitment and services, curriculum development, instructional materials and equipment, and innovative instructional methodologies appropriate to informal educational programs.

Extension activities may address, but are not limited to, the following key strategic actions:
- Support informal education to increase food, agricultural, and health literacy of youth and adults;
- Promote science-based agricultural literacy by increasing understanding and use of food and agricultural science data, information, and programs;
- Build science-based capability in people to engage audiences and enable informed decision making;
- Develop new applications of instructional tools and curriculum structures that increase technical competency and ensure global competitiveness;
- Offer non-formal learning programs that increase accessibility to new audiences at the rate at which new ideas and technologies are tested and/or developed at the community-scale; and
- Develop programs that increase public knowledge and citizen engagement leading to actions that protect or enhance the nation's food supply, agricultural productivity, environmental quality, community vitality, food security and/or public health and well-being.

These projects should synthesize and incorporate a wide range of the latest relevant research results. Please note that research-related activities such as publication of papers or speaking at scientific meetings are not considered extension for the purposes of this program.

Integrated Projects aim to resolve today's problems through the application of science-based knowledge and address needs identified by stakeholders. Integrated Projects clearly identify anticipated outcomes and have a plan for evaluating and documenting the success of the project. These projects should lead to measurable, documented changes in learning, actions, or conditions in an identified audience or stakeholder group.

Integrated Project applicants are encouraged to review www.nifa.usda.gov/funding/integrated/integrated.html for additional information on integrated programs, including tips for writing Integrated Project applications and an example of an integrated application. Those interested in submitting Integrated Project applications are encouraged to contact the Program Contact to discuss the anticipated project parameters and outcomes to ensure the application content appropriately meets the requirements of an Integrated Project.

D. Grant Types

Applications must propose one of the project types specified and select the appropriate grant type for the application within the constraints of the grant types solicited.

1. **Coordinated Agricultural Project Grants**
    The Coordinated Agricultural Project (CAP) is a type of Research, Education, Extension, or Integrated Project that supports large-scale, multi-million dollar projects to promote collaboration, open communication, and the exchange of information; reduce duplication of effort; and coordinate activities among individuals, institutions, States, and regions. Integrated CAP Grants address problems through multi-function projects that incorporate at least two of the three components of the agricultural knowledge system (*i.e.*, research, extension, and education). In a CAP, participants serve as a team that conducts targeted research, education, and/or extension in response to emerging or priority area(s) of national need. Applications articulate how a CAP will complement and/or link with existing programs or projects at the national level. A CAP contains the needed science-based expertise in research, education, and/or extension, as well as expertise from principal stakeholders and partners, to accomplish project goals and objectives. Applications should outline the potential of the project, the structure, coordination, and plan of implementation, and propose several research, education, and/or extension areas that will be evaluated during the study period. All Research, Education, Extension, and Integrated Project requirements described earlier apply to CAP Grants. CAP Grants are solicited for all priority areas. Note that Food and Agricultural Science Enhancement Grants (see Part II, D. 3 can be submitted to the program). Refer to Part I, C for Program Area Description.

2. **Conference Grants**
    Conference Grants support scientific meetings that bring together scientists to identify research, education, and/or extension needs, update information, or advance an area of science. These activities are recognized as integral parts of scientific efforts. Support for a limited number of meetings covering subject matter encompassed by this solicitation will be considered for partial or, if modest, total support. Individual conference grants are not expected to exceed $50,000 for one year and are not renewable. Indirect costs are not permitted on Conference Grant awards

3. **Food and Agricultural Science Enhancement Grants**
    FASE Grants strengthen science capabilities in research, education, and/or extension programs. FASE Grants are designed to help institutions develop competitive projects, and to attract new scientists and educators into careers in high-priority areas of National need in agriculture, food, and environmental sciences. The FASE Grants provide support for Pre- and Postdoctoral Fellowships which will be solicited in a separate NIFA Fellowships Grant Program, New Investigators, and Strengthening Grants. Specific eligibility requirements for these grants are described below.

a. Pre- and Postdoctoral Fellowship Grants
The current AFRI – Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (ELI) was formerly known as AFRI NIFA Fellowships Grant Program to provide fellowships to undergraduate, predoctoral, and postdoctoral students in the agricultural sciences. The program goals are (1) to promote research and extension experiential learning for undergraduates such that upon graduation they may enter the agriculture workforce with exceptional skills and (2) to prepare the next generation of scientists through doctoral and post-doctoral fellowships. Program information, including the anticipated release date, is available at www.nifa.usda.gov/funding/afri/afri.html.

b. New Investigator Grants
An individual who is beginning his/her career, does not have an extensive scientific publication record, and has less than five years postgraduate, career-track experience is encouraged to submit an application for a New Investigator Grant for research, education, and/or extension activities. The new investigator may not have received competitively awarded Federal research funds with the exception of pre- or postdoctoral grants or USDA NRI or AFRI Seed Grants. The application must contain documentation that lists all prior Federal support. The work proposed for New Investigator Grants must address a specific Program Area Priority described under Program Area Descriptions in Part I, C.

c. Strengthening Grants
These funds are expected to enhance institutional capacity with the goal of leading to future funding in the project area, as well as strengthen the competitiveness of the investigator's research, education, and/or extension activities. Strengthening Grants consist of CAP, Seed Grants, Equipment Grants, Sabbatical Grants and Conference grants. The work proposed for Strengthening Grants must address specific Program Area Priorities described under Program Area Descriptions in Part I, C. All applications submitted for Strengthening Grants must fulfill the eligibility requirements described below.

   1)   Strengthening Grant Eligibility
Strengthening grants are limited to 1) small and mid-sized or minority-serving degree-granting institutions that previously had limited institutional success for receiving Federal funds or 2) State Agricultural Experiment Stations or degree-granting institutions eligible for USDA Experimental Program to Stimulate Competitive Research (EPSCoR) funding and are eligible for reserved strengthening funds for Research, Education, Extension, and Integrated Project grants. See Figure 1 following Part VIII to assist with determining eligibility for Strengthening Grants.

2) Strengthening Grant Eligibility Definitions

   a) **EPSCoR States**
   Every year, NIFA determines the states that are eligible for USDA EPSCoR funding. This list includes states having a funding level no higher than the 38th percentile of all States based on a 3-year rolling average of AFRI funding levels, excluding FASE Strengthening funds granted to EPSCoR States and small-mid-sized and minority-serving degree-granting institutions. For FY 2015, the following States meet the requirements for this category

   FY 2015:
   This is the seventh year of the AFRI program and while significant FY 2014 funds are unobligated, the eligibility determinations are based on the data obtained from grants made through the AFRI program from 2011 through 2013. For FY 2015, the following States meet the requirements for this category:

FY 2015 USDA EPSCoR States		
Alabama	Mississippi	South Carolina
Alaska	Montana	South Dakota
Arizona	Nevada	Utah
Connecticut	New Hampshire	Vermont
Idaho	New Mexico	Wyoming
Kentucky	North Dakota	
Maine	Rhode Island	

   Other entities eligible for USDA EPSCoR funds in FY 2015 include the following United States commonwealths, territories, possessions and their successors, and the District of Columbia:

Other Entities eligible for USDA EPSCoR Funds	
American Samoa	Northern Mariana Islands
District of Columbia	Puerto Rico
Guam	Virgin Islands of the U.S.
Micronesia	

   b) **Small and mid-sized institutions** are academic institutions with a current total enrollment of 17,500 or less, including graduate and undergraduate as well as full- and part-time students. An institution in this instance is an organization that possesses a significant degree of autonomy as defined by being independently accredited in the current version of the Higher Education Directory, published by Higher Education Publications, Inc., 1801 Robert Fulton Drive, Suite 340, Reston, Virginia 20191 (Phone: (888) 349-7715; www.hepinc.com).

   c) **Minority-serving institutions** are academic institutions whose enrollment of a single minority group or a combination of minority groups (as defined in Part

VIII, H) exceeds 50 percent of the total enrollment, including graduate and undergraduate as well as full- and part-time students.

Applicants applying under this category should indicate the current percentage of applicable minority students enrolled at the institution in a cover letter. An institution in this instance is an organization that possesses a significant degree of autonomy as defined by being independently accredited in the current version of the Higher Education Directory, published by Higher Education Publications, Inc., 1801 Robert Fulton Drive, Suite 340, Reston, Virginia 20191 (Phone: (888) 349-7715; www.hepinc.com). A list of post-secondary minority-serving institutions can be found at www2.ed.gov/about/offices/list/ocr/edlite-minorityinst.html.

a) **Limited institutional success** is defined as institutions that are not among the most successful universities and colleges for receiving Federal funds for science and engineering research and development. See Table 1 following Part VIII for an alphabetical list of the most successful institutions.

All institutions grouped under one main campus as listed in Table 1 following Part VIII, unless located in an EPSCoR state, are excluded from eligibility for all strengthening funds. The institution may petition for an exemption to this rule as described in Part III, B.

3) Strengthening Grant Types
An individual applicant may submit only one of the following types of strengthening applications (Sabbatical Grants, Equipment Grants, and Seed Grants) as PD this fiscal year. Investigators are encouraged to contact the Program Area Priority Contact of the appropriate program area priority, regarding suitability of project topics to verify that their submission is appropriate to the program area priority. For Equipment Grants, investigators are also encouraged to contact the appropriate Program Area Priority Contact regarding appropriateness of requested equipment for topics within program area priority requirements.

a) **Coordinated Agricultural Projects (CAP)**
Refer to Part II, D. 1 for an explanation of CAP grants and refer to Part I, C for Program Area Description.

b) **Sabbatical Grants**
Sabbatical Grants are to provide an opportunity for faculty to enhance their research, education, and/or extension capabilities by funding sabbatical leaves. Collaborative arrangements are encouraged. Grants will be limited to one year of salary and funds for travel and supplies, where justified, and are not renewable.

NIFA also encourages and will support the concept of "mini-sabbaticals" for faculty and researchers desiring short-term training to learn new techniques that

will improve their competitiveness. These short-term training opportunities generally follow all of the sabbatical requirements described beginning in Part IV, C., but for a shorter duration. These grants may be used to participate in short courses offered at various research institutions.

c) Equipment Grants

Equipment Grants are designed to strengthen the research, education, and/or extension capacity of institutions by funding the purchase of one major piece of equipment. These grants are not intended to replace requests for equipment in individual project applications. Rather, they are intended to help fund items of equipment that will upgrade infrastructure. Requests for computer equipment are allowed only if the equipment is to be used in an activity integral to the proposed project. Requests for computer equipment will not be permitted if the equipment will primarily serve as a word processor or perform administrative functions.

Each request shall be limited to one major piece of equipment within the cost range of $10,000-$250,000 and are not renewable. The amount of Federal funding requested shall not exceed 50 percent of the cost or $50,000, whichever is less. Unless a waiver is granted by NIFA using the criteria listed in Part III, C., it is the responsibility of the PD to secure required matching funds with non-Federal funds (see Part III, C for more information). No installation, maintenance, warranty, or insurance expenses may be paid from these grants, nor may these costs be part of the matching funds. Indirect costs are not permitted on Equipment Grant awards.

d) Seed Grants

Seed Grants are to provide funds to enable investigators to collect preliminary data or perform other preliminary activities in preparation for applying for future grants from AFRI. The grants are not intended to fund stand-alone projects, but rather projects that will lead to further work applicable to one of the AFRI Program Areas. Seed Grant applications proposing an Integrated Project only need to include one of the three functions (research, education, extension) and justify how this Seed Grant will allow the applicant to become competitive for future Integrated Project funding.

Seed Grants are limited to a total of $150,000 (including indirect costs) for two year duration and are not renewable.

e) Strengthening Conference Grants

Conference Grant applications that meet the eligibility requirements for Strengthening Grants are eligible for reserved strengthening funds as a Strengthening Conference Grant. The eligibility requirements only apply to the lead PD and are not required for co-PD(s) associated with the project.

E. Responsible and Ethical Conduct of Research

The responsible and ethical conduct of research (RCR) is critical for excellence, as well as public trust, in science and engineering. Consequently, we consider education in RCR essential to the preparation of future scientists. In accordance with sections 2, 3, and 8 of 7 CFR Part 3022, institutions that conduct USDA-funded extramural research must foster an atmosphere conducive to research integrity, bear primary responsibility for prevention and detection of research misconduct, and maintain and effectively communicate and train their staff regarding policies and procedures. In the event an application to NIFA results in an award, the Authorized Representative (AR) assures, through acceptance of the award that the institution will comply with the above requirements. Per award terms and conditions, grant recipients shall, upon request, make available to NIFA the policies, procedures, and documentation to support the conduct of the training.

Note that the training referred to herein shall be either on-campus or off-campus training. The general content of the ethics training will, at a minimum, emphasize three key areas of research ethics: authorship and plagiarism, data and research integration, and reporting misconduct. Each institution will be responsible for developing its own training system, as schools will need flexibility to develop training tailored to their specific student needs. Grantees should consider the Collaborative Institutional Training Initiative (CITI) program for RCR (https://www.citiprogram.org/rcrpage.asp). Typically this RCR education addresses the topics of: Data Acquisition and Management - collection, accuracy, security, access; Authorship and Publication; Peer Review; Mentor/Trainee Responsibilities; Collaboration; Conflict of Interest; Research Misconduct; Human Subject Research; and Use of Animals in Research.

PART III—ELIGIBILITY INFORMATION

A. Eligible Applicants

Eligibility is linked to the **project type**. All project types are described beginning in Part II, C.

Applicants must respond to the Program Area Priorities and deadlines found in the FY 2015 RFA. Grant recipients may subcontract to organizations not eligible to apply provided such organizations are necessary for the conduct of the project. An applicant's failure to meet an eligibility criterion by the time of an application deadline may result in the application being excluded from consideration or, even though an application may be reviewed, will preclude NIFA from making an award.

1. **Conference Projects**
   Eligible applicants include:1) State Agricultural Experiment Stations; 2) colleges and universities (including junior colleges offering associate degrees or higher); 3) university research foundations; 4) other research institutions and organizations; 5) Federal agencies, 6) national laboratories; 7) private organizations or corporations; 8) individuals who are U.S. citizens, nationals, or permanent residents; and 9) any group consisting of 2 or more entities identified in 1) through 8). Eligible institutions do not include foreign and international organizations.

2. **Integrated Projects**
   Eligible applicants for Integrated Projects include: 1) colleges and universities; 2) 1994 Land-Grant Institutions; and (3) Hispanic-serving agricultural colleges and universities.

   For Integrated Projects, the terms "college" and "university" mean an educational institution in any state which 1) admits as regular students only persons having a certificate of graduation from a school providing secondary education, or the recognized equivalent of such a certificate; 2) is legally authorized within such state to provide a program of education beyond secondary education; 3) provides an educational program for which a bachelor's degree or any other higher degree is awarded; 4) is a public or other nonprofit institution; and 5) is accredited by a nationally recognized accrediting agency or association. A research foundation maintained by a college or university is eligible to receive an award under this program.

3. **Hispanic-serving Agricultural Colleges and Universities**
   Section 7101 of the Food, Conservation, and Energy Act of 2008 (Pub. L. 110-246) amended section 1404 of NARETPA (7 U.S.C. 3103) to create a definition for a new group of cooperating institutions: Hispanic-serving Agricultural Colleges and Universities (HSACUs). HSACUs are colleges and universities that qualify as Hispanic-serving Institutions (HSIs) and offer associate, bachelors, or other accredited degree programs in agriculture-related fields. HSACUs do not include 1862 land-grant institutions.

Pursuant to section 406 of the Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA) (7 U.S.C. 7626), which authorized the Integrated Research, Education, and Extension Competitive Grant Program, all four-year HSIs are eligible to apply for integrated projects as identified in the FY 2015 AFRI RFA. Two-year HSIs may also be eligible to apply but only if the institution has been certified as a HSACU for the fiscal year in which funding is being provided.

A list of the institutions certified and therefore eligible to apply as HSACUs for grants under FY 2015 RFAs, including this RFA, will be made available at www.nifa.usda.gov/nea/education/in_focus/hispanic_if_hispanic_HSACU.html. Institutions appearing on this list are granted HSACU certification by the Secretary for the period starting October 1, 2014, and ending September 30, 2015. Certifications are valid for FY 2015 only. Additional questions on HSACU eligibility can be emailed to hsacu@nifa.usda.gov.

4. Food and Agricultural Science Enhancement Grants
The Food and Agricultural Science Enhancement (FASE) Grants have additional eligibility requirements. See Part II, D. 3 for details.

B. Request for Determination

1. Minority-Serving Institution
If an applicant's institution can be considered a minority-serving institution and wishes to be considered for a Strengthening Grant (as described in Part II, D. 3. b), but does not serve one or more of the minority groups specified in the Definitions section of this RFA (see Part VIII, H), the applicant must submit to NIFA documentation supporting the request. This documentation (see below) must be submitted as part of the requestor's Letter of Intent and the full application package (see Part IV, B. 3. g. 7)), and must be received by NIFA by the applicable program deadline. The Secretary of Agriculture or designated individual will determine whether the group or groups identified by the institution qualify as a minority group for the purpose of receiving a Strengthening Grant under this program.

The Request for Determination as a minority-serving institution must include the following and be provided in the order specified below:

> 1. A description of each minority group that is being submitted for determination;
> 2. Data or studies supporting this group's designation as a minority group; and
> 3. Data indicating that enrollment of the minority group(s) exceeds 50 percent of the total enrollment at the academic institution, including graduate and undergraduate and full- and part-time students.

2. Multi-Campus Institution

All institutions grouped under one main campus as listed in Table 1 following Part VIII, unless located in an EPSCoR state (listed in Part II, D. 3. b. 1) a)), are excluded from eligibility for all strengthening funds. However, if any campus within a multi-campus listing can provide

information demonstrating that it is administratively independent or has an independent accreditation, then the institution may petition for an exemption to this rule and request eligibility for strengthening funds. The Letter of Intent and the application must include a letter indicating how the institution is independent of the main campus, either through accreditation or administration, how the institution is eligible as a small and mid-sized or minority-serving institution due to enrollment, and total federal funds received for science and engineering research and development. The letter must be signed by the Authorized Representative (AR) and included with the Letter of Intent and the full application (see Part IV, B. 3. g. 7)).

C. Cost Sharing or Matching

If a funded **applied Research or Integrated Project** is commodity-specific and not of national scope, the grant recipient is required to match the USDA funds awarded on a dollar-for-dollar basis from non-Federal sources with cash and/or in-kind contributions.

For Equipment Grants: The amount of Federal funds provided may not exceed 50 percent of the cost of the equipment acquired using funds from the grant, or $50,000, whichever is less. Grantees are required to match 100 percent of Federal funds awarded from non-Federal sources. The Secretary may waive all or part of the matching requirement if all three of the following criteria are met: 1) applicants must be a college, university, or research foundation maintained by a college or university that ranks in the lowest one third of such colleges, universities, and research foundations on the basis of Federal research funds received (see Table 2 following Part VIII for eligibility); 2) if the equipment to be acquired using funds from the grant costs not more than $25,000; and 3) has multiple uses within a single research project or is usable in more than one research project. If the institution believes it is eligible for the waiver for matching funds, the budget justification must include a letter signed by the institution's AR stating this information.

D. Centers of Excellence

Pursuant to Section 7214 of the Agricultural Act of 2014 (Pub. L. 113-79), beginning in Fiscal Year 2015, for applicable competitive research and extension programs, NIFA will be recognizing and providing priority in the receipt of funding to applications from "centers of excellence" that have been established for purposes of carrying out research, extension, and education activities relating to the food and agricultural sciences. In July of 2014, NIFA held listening sessions and accepted written comments from stakeholders to inform NIFA's implementation of the centers of excellence provision. Information from the webinars and a summary of the input gathered are available on NIFA's website at http://www.nifa.usda.gov/about/offices/legis/cntr_ex_webinar_documents.html

A center of excellence is composed of 1 or more of the following entities that provide financial or in-kind support to the center of excellence. Therefore, an eligible applicant who wishes to be considered as a center of excellence must be one of the following entities that provides financial or in-kind support to the Center being proposed, as described in the grant application.
>   (A) State agricultural experiment stations;
>   (B) colleges and universities;
>   (C) university research foundations;

(D) other research institutions and organizations;

(E) Federal agencies;

(F) national laboratories;

(G) private organizations, foundations, or corporations;

(H) individuals; or

(I) any group consisting of 2 or more of the entities described in (A) through (H).

Only CAP grants and standard grant applicants may be considered for COE designation. See Part IV, C. of this RFA for additional requirements that eligible applicants must meet to be considered a center of excellence.

PART IV—APPLICATION AND SUBMISSION INFORMATION

A. Letter of Intent Instructions

Applicants are encouraged to submit a "Letter of Intent to Submit an Application" by the Letter of Intent due date specified in this RFA. This does not obligate the applicant in any way, but will provide useful information to NIFA in preparing for application review.

Although a letter of intent is not required, is not binding, and does not enter into the review of a subsequent application, the information that it contains allows program staff to estimate the potential review workload and plan the review.

Please follow the guidelines below for LOI submission
1. The Letter of Intent must adhere to the following formatting guidelines:
   a. Font size must be at least 12 point
   b. Margins must be at least one inch in all directions
   c. Line spacing must not exceed six lines of text per vertical inch
   d. Page size must be letter (i.e., 8.5 inches × 11 inches)

2. The Letter of Intent is limited to **three pages** for CAP grants and **two pages** for all other grant types.
   a. On Page 1, provide **only** the following information:
      i. the name, professional title, department, institution, and *e*-mail address of the lead project director (PD) and name, professional title, department, and institution of all collaborating investigators
      ii. the Program Area or the Program Area Priority that is most closely addressed in the application
   b. On Page 2, include:
      i. a descriptive title
      ii. rationale
      iii. overall hypothesis or goal
      iv. specific objectives
      v. approach
      vi. potential impact and expected outcomes

3. When submitting LOI, NIFA will only accept LOI in the portable document format (PDF). Attach the PDF LOI to an e-mail addressed to the appropriate Program Area *e*-mail address for Submission of Letter of Intent indicated in this RFA. In the e-mail subject line, write: Letter of Intent [Program Area Code] _ [PDs Last Name].

4. A Letter of Intent is requested for all grant types, except Conference Grant applications.

5. Submission of more than one Letter of Intent to a program is discouraged.

6. An acknowledgement receipt will be sent via email by replying to the sender within five business days.

7. Letters of Intent will be reviewed by scientific program staff in order to plan for appropriate expertise for the peer review panel and ensure that the proposed project fits appropriately within the Program Area Priorities.

B. Electronic Application Package

Only electronic applications may be submitted via Grants.gov to NIFA in response to this RFA. We urge you to submit early to the Grants.gov system. For an overview of the Grants.gov application process see http://www.grants.gov/web/grants/applicants/grant-application-process.html.

New Users of Grants.gov

Prior to preparing an application, we recommend that the Project Director/Principal Investigator (PD/PI) first contact an Authorized Representative (AR, also referred to as Authorized Organizational Representative or AOR) to determine if the organization is prepared to submit electronic applications through Grants.gov. If not (e.g., the institution/organization is new to the electronic grant application process through Grants.gov), <u>then the one-time registration process must be completed</u> **PRIOR** to submitting an application. <u>It can take as long as 2 weeks to complete the registration process so it is critical to begin as soon as possible</u>. In such situations, the AR should go to **"Register" in the top right corner of the Grants.gov web page (or go to** http://www.grants.gov/web/grants/register.html**) for information on registering the institution/organization with Grants.gov.** Part II.1. of the NIFA Grants.gov Application Guide contains detailed information regarding the registration process. Refer item 2. below to locate the "NIFA Grants.gov Application Guide".

Steps to Obtain Application Package Materials

To receive application materials:
1. You must download and install a version of Adobe Reader compatible with Grants.gov to access, complete, and submit applications. For basic system requirements and download instructions, see http://www.grants.gov/web/grants/support/technical-support/software/adobe-reader-compatibility.html. Grants.gov has a test package that will help you determine whether your current version of Adobe Reader is compatible.

2. To obtain the application package from Grants.gov, go to http://www.grants.gov/web/grants/applicants/apply-for-grants.html. Under Step 1 click on "Download a Grant Application Package," and enter the funding opportunity number

   Funding Opportunity Number: USDA-NIFA-AFRI-004918

   in the appropriate box and click "Download Package." From the search results, click "Download" to access the application package.

Contained within the application package is the "NIFA Grants.gov Application Guide." This guide contains an introduction and general Grants.gov instructions, information about how to use a Grant Application Package in Grants.gov, and instructions on how to complete the application forms.

If you require assistance to access the application package (e.g., downloading or navigating Adobe forms) **or submitting the application,** refer to resources available on the Grants.gov website (http://www.grants.gov/web/grants/applicants/applicant-resources.html). Grants.gov assistance is also available at:

> Grants.gov customer support
> 800-518-4726 Toll-Free or 606-545-5035
> Business Hours: 24 hours a day, 7 days a week. Closed on federal holidays.
> Email: support@grants.gov

> Grants.gov iPortal (see https://grants-portal.psc.gov/Welcome.aspx?pt=Grants): Top 10 requested help topics (FAQs), Searchable knowledge base, self-service ticketing and ticket status, and live web chat (available 7 a.m. - 9 p.m. ET). Get help now!

> Have the following information available when contacting Grants.gov:
> - Funding Opportunity Number (FON)
> - Name of agency you are applying to
> - Specific area of concern

See http://www.nifa.usda.gov/funding/electronic.html for additional resources for applying electronically.

B. Content and Form of Application Submission

You should prepare electronic applications following Parts V and VI of the NIFA Grants.gov Application Guide. This guide is part of the corresponding application package (see Section A. of this Part). The following is **additional information** needed to prepare an application in response to this RFA. **If there is discrepancy between the two documents, the information contained in this RFA is overriding.**

Note the attachment requirements (e.g., PDF) in Part III section 3. of the guide. <u>ANY PROPOSALS THAT ARE NON-COMPLIANT WITH THE REQUIREMENTS (e.g., content format, PDF file format, file name restrictions, and no password protected files) WILL BE AT RISK OF BEING EXCLUDED FROM NIFA REVIEW</u>. Grants.gov does not check for NIFA required attachments or that attachments are in PDF format; see Part III section 6.1 of the guide for how to check the manifest of submitted files. Partial applications will be excluded from NIFA review. We will accept subsequent submissions of an application until close of business on the closing date in the RFA (see Part V, 2.1 of the NIFA Grants.gov Application Guide for further information).

Grants.gov provides online tools to assist if you do not own PDF-generating software. You will find PDF conversion software at http://test.grants.gov/web/grants/support/technical-support/software/pdf-conversion-software.html.

For any questions related to the preparation of an application, review the NIFA Grants.gov Application Guide and the applicable RFA. If assistance is still needed for preparing application forms content, contact:

- Email: electronic@nifa.usda.gov
- Phone: 202-401-5048
- Business hours: Monday through Friday, 7 a.m. – 5 p.m. ET, excluding federal holidays.

1. SF 424 R&R Cover Sheet

Information related to the questions on this form is dealt with in detail in Part V, 2. of the NIFA Grants.gov Application Guide.

2. SF 424 R&R Project/Performance Site Location(s)

Information related to the questions on this form is dealt with in detail in Part V, 3. of the NIFA Grants.gov Application Guide.

3. R&R Other Project Information Form

Information related to the questions on this form is dealt with in detail in Part V, 4. of the NIFA Grants.gov Application Guide.

a. Field 7. Project Summary/Abstract. The summary should also include the relevance of the project to the goals of the Water for Agriculture Challenge Area program. See Part V. 4.7 of NIFA Grants.gov Application Guide for further instructions and a link to a suggested template.

b. Field 8. Project Narrative.

For Conference, New Investigator, Coordinated Agricultural Project (CAP), and Strengthening CAP and Conference Grant applications, the Project Narrative section may not exceed a total of 18 pages with 12-point font and line spacing not exceeding six lines of text per vertical inch, including all figures and tables.

For Sabbatical, Equipment, and Seed Grant applications, the Project Narrative section may not exceed a total of 7 pages with 12-point font and line spacing not exceeding six lines of text per vertical inch, including all figures and tables.

To ensure fair and equitable competition, applications exceeding the applicable page limitation will be returned without review.

Each Project Narrative is expected to be complete; however, preprints (see Part IV, C. 4. g) related to the Project Narrative are allowed if they are directly germane to the proposed project. Information may not be appended to an application to circumvent page limitations prescribed for the Project Narrative.

Project Narrative must include all of the following:

1) Response to Previous Review (if applicable)
   This requirement only applies to Resubmitted Applications and Resubmitted Renewal Applications as described in Part II, B. The Project Narrative attachment should include two components: 1) a one-page response to the previous review panel summary titled "Response to Previous Review" included as the first page of the attachment and 2) the 7- or 18-page Project Narrative, as required (see Part IV, C. 3. c above). The one-page Response to Previous Review does not count against the 7- or 18-page limit of the Project Narrative.

2) Project Narrative

   a. Introduction
   Include a clear statement of the long-term goal(s) and supporting objectives of the proposed project. Summarize the body of knowledge or past activities that substantiate the need for the proposed project. Describe ongoing or recently completed activities significant to the proposed project including the work of key project personnel. Include preliminary data/information pertinent to the proposed project. All works cited should be referenced (see Bibliography & References Cited in section d. below).

   b. Rationale and Significance
      1. Concisely present the rationale behind the proposed project;
      2. Describe the specific relationship of the project's objectives to one of the Program Area Priorities. Applications that do not address at least one Program Area Priority will not be reviewed; and
      3. The potential long-range improvement in and sustainability of U.S. agriculture and food systems should be shown clearly. These purposes are described under Purpose and Priorities in Part I, B. Any novel ideas or contributions that the proposed project offers should also be discussed in this section.

   c. Approach
   The activities proposed or problems being addressed must be clearly stated and the approaches applied are to be clearly described. Specifically, this section must include:
      1. A description of the activities proposed and the sequence in which the activities are to be performed;
      2. Methods to be used in carrying out the proposed project, including the feasibility of the methods;
      3. Expected outcomes;
      4. Means by which results will be analyzed, assessed, or interpreted;
      5. How results or products will be used;
      6. Pitfalls that may be encountered;
      7. Limitations to proposed procedures;

8. A full explanation of any materials, procedures, situations, or activities related to the project that may be hazardous to personnel, along with an outline or precautions to be exercised to avoid or mitigate the effects of such hazards; and

9. A timeline for attainment of objectives and for production of deliverables that includes annual milestones with specific, measurable outcomes.

➤ *For Integrated Project Applications –*

- Integrated Project applications must include at least two of the three functions of the agricultural knowledge system (i.e., research, education, and extension). Each function should be represented by one or more objectives within the application.
- Projects must budget sufficient resources to carry out the proposed set of research, education, and/or extension activities that will lead to the desired outcomes. No more than two-thirds of a project's budget may be focused on a single function.
- Integrated Projects must include individuals on the project team with significant expertise in each component of the project (research, education, and/or extension).
- A plan for evaluating progress toward achieving project objectives must be included. The plan must include milestones, which signify the completion of a major deliverable, event, or accomplishment and serve to verify that the project is on schedule and on track for successful conclusion. The plan should also include descriptions of indicators that you will measure to evaluate whether the research, education, and/or extension activities are successful in achieving project goals and in contributing to achievement of the stated program goals and outcomes.
- In addition to the Project Narrative requirements above, the proposed Integrated Project should clearly articulate:
  o Stakeholder involvement in project development, implementation, and evaluation, where appropriate;
  o Objectives for each function included in the project (note that extension and education activities are expected to differ and to be described in separate project objectives; see enumerated descriptions in Part II, C.); and
  o A dissemination plan describing the methods that will be used to communicate findings and project accomplishments.
- AFRI encourages Integrated Projects that develop content suitable for delivery through eXtension. This content is for "end users" as opposed to staff development and must follow the eXtension Guiding Principles and guidelines for including eXtension in a proposal presented at http://about.extension.org/wiki/NIFA_RFA_Information. Funds may be used to 1) enhance an existing Community of Practice or 2) to establish a new Community of Practice, as appropriate.
- AFRI encourages Integrated Projects that are suitable for 4-H audiences and stakeholder groups while meeting identified program priorities. The 4-H Youth Development is the programmatic outreach of the Land Grant Universities and Institutions to our youngest citizens in their communities and provides opportunities for youth to develop skills, practical knowledge, and wisdom with an emphasis on practical application of knowledge or "learning by doing." By engaging 4-H in AFRI projects, applicants engage young people as citizen scientists; increase their awareness of the role of agriculture; and prepare

young people for higher education and the 21st century work environment. Opportunities for engaging 4-H in AFRI proposals should align with the 4-H Mission Mandates of Science, Engineering and Technology; Healthy Living; and Citizenship. See guiding principles at www.national4-hheadquarters.gov or contact your university Cooperative Extension headquarters and/or State 4-H Program Office.

➢ *For Conference Grant Applications* – In addition to the Project Narrative requirements above, substitute the following in the Approach section:
- A justification for the meeting;
- Recent meetings on the same subject with dates and locations;
- Names and organizational affiliations of the chair and other members of the organizing committee;
- A proposed program (or agenda) for the conference, including a listing of scheduled participants and their institutional affiliations; and
- The method of announcement or invitation that will be used.

➢ *For Sabbatical Grant Applications* – In addition to the Project Narrative requirements above, substitute the following in the Approach section:
- A general description of the research, education, and/or extension interests and goals of the applicant in order to provide perspective for the application;
- A description of the project to be pursued while on the sabbatical leave;
- A statement of how the sabbatical leave will enhance the capabilities of the applicant; and
- A statement of future research goals and objectives once the sabbatical is complete and how the sabbatical will enable the applicant to pursue these goals.

➢ *For Equipment Grant Applications* – In addition to the Project Narrative requirements above, include a general description of the project(s) for which the equipment will be used, how the equipment will fit into or enhance the research, education, and/or extension program, and how the equipment will allow the applicant to become competitive for future funding or move into new research areas. Also include a description of other similar or complementary equipment available to the PD at the institution and why the requested equipment is necessary.

➢ *For Seed Grant Applications* – Include all of the components detailed in the Project Narrative section above and present enough detail to allow adequate evaluation. In order to be competitive, long-term goals and a statement describing how this Seed Grant will allow the applicant to become competitive for future funding must be included.

d. Center of Excellence Justification

Only CAP grants and standard grant applicants may be considered for COE designation.

In addition to meeting the other requirements detailed in Part IV, C., of this Request for Application (RFA), eligible applicants who wish to be considered as centers of excellence must provide a brief justification statement, as part of their Project Narratives and within the

page limits provided, describing how they meet the standards of a center of excellence, based on the following criteria:

(A) the ability of the center of excellence to ensure coordination and cost effectiveness by reducing unnecessarily duplicative efforts regarding research, teaching, and extension in the implementation of the proposed research and/or extension activity outlined in this application;

(B) in addition to any applicable matching requirements, the ability of the center of excellence to leverage available resources by using public-private partnerships among agricultural industry groups, institutions of higher education, and the Federal Government in the implementation of the proposed research and/or extension activity outlined in this application. Resources leveraged should be commensurate with the size of the award;

 (C) the planned scope and capability of the center of excellence to implement teaching initiatives to increase awareness and effectively disseminate solutions to target audiences through extension activities in the implementation of the proposed research and/or extension activity outlined in this application; and

(D) the ability or capacity of the center of excellence to increase the economic returns to rural communities by identifying, attracting, and directing funds to high-priority agricultural issues in support of and as a result of the implementation of the proposed research and/or extension activity outlined in this application.

Additionally, where practicable (not required), center of excellence applicants should describe proposed efforts to improve teaching capacity and infrastructure at colleges and universities (including land-grant colleges and universities, cooperating forestry schools, certified Non-Land Grant Colleges of Agriculture (NLGCA) (list of certified NLGCA is available at http://www.nifa.usda.gov/funding/pdfs/nlgca_colleges.pdf), and schools of veterinary medicine).

Field 12. Other Attachments

The following instructions are in addition to those noted in Part V 4.12 of the NIFA Grants.gov Application Guide

Non-Land Grant College of Agriculture (NLGCA) Certification – PDF Attachment. Applicants claiming exemption from the new matching requirement as NLGCA, must attach the NLGCA certification letter they requested and received from NIFA. Title attachment 'NLGCA Certification' and save file as 'NLGCACertification'. To request certification as an NLGCA, complete the form at http://www.nifa.usda.gov/form/form.html. Note that certification can take up to 30 days from submission of request form.

4. R&R Senior/Key Person Profile (Expanded)
Information related to the questions on this form is dealt with in detail in Part V, 5. of the NIFA Grants.gov Application Guide. This section of the Guide includes information about the people who require a Senior/Key Person Profile, and details about the Biographical Sketch and the Current and Pending Support, including a link to a suggested template for the Current and Pending Support.

A Senior/Key Person Profile should be completed for the PD and each co-PD, senior associate, and other professional personnel, including collaborators playing an active role in the project. Collaborators only providing services or materials should not be listed in the R&R Senior/Key Person Profile. Evidence (letters of support) for this type of collaboration should be provided in the Documentation of Collaboration (see Part IV, C. 4. g. 5).

a. *Project Role Field* – Complete appropriately.

➢ *For Sabbatical Grant Applications* – Select "PD/PI" for the Sabbatical Grant applicant. Select "Other" for the corresponding scientific host(s) and any other personnel whose qualification merit consideration in the evaluation of the application.

➢ *For Equipment Grant Applications* – Select "PD/PI" for the Equipment Grant applicant. Select "Faculty" for the other major users of the equipment.

b. *Other Project Role Category Field* – Complete appropriately, if applicable.

Attach Biographical Sketch Field – **PDF Attachment. 2-Page Limit** (excluding publications listings) per PD, co-PD, senior associate, and other professional personnel. Title the attachment as 'Biographical Sketch' in the document header and save file as 'BiographicalSketch'.

A biographical sketch (vitae) of the PD and each co-PD, senior associate, and other professional personnel should be included.

The Conflict of Interest list should not be included in the biographical sketch, but it must be provided as a separate document (see Part IV, C. 8. c for more information).

➢ *For Sabbatical Grant Applications* – A Biographical Sketch must be submitted for the Sabbatical Grant applicant, the scientific host(s), and any other personnel whose qualifications merit consideration in the evaluation of the application.

➢ *For Equipment Grant Applications* – A Biographical Sketch for both the Equipment Grant applicant and other major users of the equipment must be submitted.

c. *Attach Current and Pending Support Field* – **PDF Attachment. No Page Limit.** Title the attachment as 'Current and Pending Support' in the document header and save file as 'CurrentPendingSupport'.
A recommended template for the Current and Pending Support can be found at: www.nifa.usda.gov/funding/templates/current_pending.doc.

Current and Pending Support information is only required for personnel with PD or co-PD indicated as their Project Role on the R&R Senior/Key Person Profile. All applications must contain a list of all Current and Pending Support detailing public or private support (including in-house support) to which personnel identified in the application have committed

portions of their time, whether or not salary support for person(s) involved is included in the budget. <u>Please note that the project being proposed should be included in the pending section of the form</u>. Total project listed for each PD should be indicated as percent effort and not exceeds 100% for concurrent (Current and Pending) projects.

The AFRI program will not fund an application that duplicates or overlaps substantially with other NIFA funding (including non-competitive funds such as Special Grants or Hatch formula funds) or other Federal funding. As an addendum to the Current and Pending Support, provide a brief summary for any completed, current, or pending projects that appear similar to the current application, especially previous NRI or AFRI awards.

➢ *For Sabbatical Grant Applications* – Current and Pending Support for both the Sabbatical Grant applicant and the scientific host(s) (as documentation of on-going work in the host's laboratory) must be completed.

➢ *For Equipment Grant Applications* – Current and Pending Support for both the Equipment Grant applicant and other major users of the equipment must be completed. If the applicant has significant funding from other sources, a justification must be provided in the Project Narrative for how this equipment will strengthen the applicant's research program or institution.

5. <u>R&R Personal Data</u> – As noted in Part V, 6. of the NIFA Grants.gov Application Guide, the submission of this information is voluntary and is not a precondition of award.

6. <u>R&R Budget</u>
Information related to the questions on this form is dealt with in detail in Part V, 7. of the NIFA Grants.gov Application Guide.

a. **Budget Periods.** Applications must contain a budget for each budget period for the entire duration of the proposed project. Annual and cumulative budgets are required.

If a project is funded, beginning in the first year of funding, the project director will be required to attend annual investigator meetings for the duration of the award (excluding Conference, Sabbatical, and Equipment Grant applications). The project directors for Seed Grant applications are required to attend beginning in the second year of funding. The project directors for Exploratory Grant applications are required to attend the investigator meeting near the termination time of the award. Reasonable travel expenses should be included as part of the project budget.

➢ *For Integrated Project Applications* – Projects must budget sufficient resources to carry out the proposed set of research, education, and/or extension activities that will lead to the desired outcomes. No more than two-thirds of a project's budget may be focused on a single component. Projects that include partnering with eXtension must include financial support for the Community of Practice core functions as well as project-specific activities.

➢ *For Conference Grant Applications* – The budget for the conference may include an appropriate amount for transportation and subsistence costs for participants and for other conference-related costs. Conference awards are not expected to exceed $50,000 and are not renewable. Indirect costs are not permitted on Conference Grant awards. Include an itemized breakdown of all support requested from the AFRI in the Budget Justification (Field K. of the R&R Budget).

➢ *For Sabbatical Grant Applications* – Limit to one year's salary and funds for travel and supplies.

➢ *For Equipment Grant Applications* – Each request shall be limited to one major piece of equipment within the cost range of $10,000-$250,000. Equipment grants are not renewable. The amount of Federal funding requested shall not exceed 50 percent of the cost or $50,000, whichever is less. Unless waived, it is the responsibility of the PD to secure the required matching funds with non-Federal funds (see Part III, C for more information). No installation, maintenance, warranty, or insurance expenses may be paid from these awards, nor may these costs be part of the matching funds. Indirect costs are not permitted on Equipment Grant awards.

➢ *For Seed Grant Applications* – These awards will be limited to a total of $150,000 (including indirect costs) for two years and are not renewable.

b. *Field H. Indirect Costs* – NIFA is prohibited from paying indirect costs exceeding 30 percent of the total Federal funds provided under each award. This limitation is equivalent to 0.42857 of the total direct costs of an award. See Part IV, E for additional information.

c. *Field K. Budget Justification* – **PDF Attachment. No Page Limit.** Title the attachment as 'Budget Justification' in the document header and save file as 'BudgetJustification'.

All cumulative budget categories, with the exception of Indirect Costs, for which support is requested must be individually listed (with costs) in the same order as the cumulative budget. NOTE: For continuation awards, all budget categories for year one must also be fully justified. If consulting, collaborative, or subcontractual arrangements are included in the application, these arrangements should be fully explained and justified. The rate of pay for any consultant must be included, if known at the time of application. Please include a cost breakdown for the consultant, including the number of days in service, travel, and per diem, as well as the rate of pay. Letters of consent or collaboration and other evidence should be provided in the Documentation of Collaboration (see Part IV, C. 4. g. 5) to show that collaborators have agreed to participate. A proposed statement of work, biographical sketch, and a budget for each arrangement involving the transfer of substantive programmatic work or the provision of financial assistance to a third party must be supplied. In multi-institutional applications, a budget and budget narrative must be included for each institution involved. The lead institution and each participating institution must be identified.

➢ *For Integrated Project Applications* – Each function should be represented by one or more objectives within the application. Projects must budget sufficient resources to carry out the proposed set of research, education, and/or extension activities that will lead to the desired outcomes. No more than two-thirds of a project's budget may be focused on a single component.

➢ *For Equipment Grant Applications* – The Budget Justification should describe the instrument requested including the manufacturer and model number, if known; provide a detailed budget breakdown of the equipment and accessories required; and indicate the amount of funding requested from USDA for each component of equipment requested. A letter signed by the institution's AR stating that the necessary non-Federal matching funds will be made available from an institutional or other source is required. An institution that believes it is eligible for the waiver of the matching funds should include a letter stating and documenting the eligibility that is signed by the institution's AR (see Table 2 following Part VIII for eligibility). A justification must be given for how this equipment will strengthen the applicant's research program or institution.

d. Subcontract Arrangements
If it will be necessary to enter into a formal subcontract agreement with another institution, financial arrangements must be detailed in the "R&R Subaward Budget Attachment(s) Form." Annual and cumulative budgets, budget justification and a letter of commitment signed by the Authorized Representative (AR) are required for each subcontract agreement. Refer to Part V, 8. of the NIFA Grants.gov Application Guide for instructions on completing this form.

e. Matching
Equipment Grants requiring matching funds, as specified in Part III, C., must include a letter in the budget justification signed by the institution's AR stating that the necessary non-Federal matching funds will be made available from the institution or other source. The amount of Federal funds provided may not exceed 50 percent of the cost of the equipment acquired using funds from the grant, or $50,000, whichever is less. Grantees are required to match 100% of federal funds awarded from non-Federal sources. If the institution believes it is eligible for the waiver for matching funds (see Part III, C. for waiver eligibility), the budget justification must include a letter signed by the institution's AR stating this information. NIFA will consider this justification when ascertaining final matching requirements or in determining if required matching can be waived. NIFA retains the right to make final determinations regarding matching requirements.

If a funded project is commodity-specific and not of national scope, the grant recipient is required to match the USDA funds awarded on a dollar-for-dollar basis from non-Federal sources with cash and/or in-kind contributions.

The sources and the amount of all matching support from outside the applicant organization should be summarized on a separate page and placed in the application immediately

following the Budget Justification. All pledge agreements must be placed in the application immediately following the summary of matching support.

The value of applicant contributions to the project shall be established in accordance with applicable cost principles. Applicants should refer to OMB Circular A-21 (2 CFR Part 220), Cost Principles for Educational Institutions, for further guidance and other requirements relating to matching and allowable costs.

7. <u>Supplemental Information Form</u>
Information related to the questions on this form is dealt with in detail in Part VI, 1. of the NIFA Grants.gov Application Guide.

a. **Field 2. Program to which you are applying.** Enter the Program (Area Priority) Code Name and the Program (Area Priority) Code for the Program Area Priority to which you are applying from the information provided in the Program Area Descriptions beginning in Part I, C. An application can only be submitted to one program (Area Priority). It is extremely important that the Program (Area Priority) Code Name and Program (Area Priority) Code are spelled correctly and match this RFA. If you have a question about which topic area is appropriate for your application, please contact the Program Area Priority Contact.

b. **Field 8. Conflict of Interest List**. See Part VI, 1.8 of the NIFA Grants.gov Application Guide for further instructions and a link to a suggested template.

A Conflict of Interest List is required for all applications submitted to the AFRI. The Conflict of Interest List should be provided as a separate PDF attachment and not included in the vitae or resume. A Conflict of Interest List must be completed individually for all personnel who have submitted a Biographical Sketch in the R&R Senior/Key Personnel Profile. Collate all individual Conflict of Interest lists into a single document file. The lists can only be submitted as a single PDF attachment.

A recommended template for the Conflict of Interest List can be found at: www.nifa.usda.gov/funding/templates/conflict_of_interest.doc.

C. Submission Dates and Times

Prior to electronic submission of the application via Grants.gov, it is strongly recommended that an administrative review be conducted to ensure that an application complies with all application preparation instructions. An application checklist is included in Part VII of the NIFA Grants.gov Application Guide to assist with this review.

Instructions for submitting an application are included in Part IV, Section 1.9 of the NIFA Grants.gov Application Guide.

1. **Letter of Intent**

a. Deadline – April 9, 2015 (5:00 p.m., ET).
b. Attach the PDF Letter of Intent (LOI) to an *e*-mail addressed to:
    waterforag@nifa.usda.gov
    In the *e*-mail subject line, write: *Letter of Intent [Program Area Priority Code]_ [PDs Last Name]*.
c. An acknowledgement receipt will be sent via email by replying to the sender within 5 business days after submission.
d. LOIs will be reviewed by scientific program staff in order to plan for appropriate expertise for the application peer review panel and ensure that the proposed project fits appropriately within the Program Area Priorities.

2. Full Application

Applications must be received by Grants.gov by **5:00 p.m. Eastern Time on May 15, 2015**. Applications received after this deadline will normally not be considered for funding.

If you have trouble submitting an application to Grants.gov, you should FIRST contact the Grants.gov Help Desk to resolve any problems. Keep a record of any such correspondence. See Part IV. A. for Grants.gov contact information.

We send email correspondence to the AR regarding the status of submitted applications. Therefore, applicants are strongly encouraged to provide accurate e-mail addresses, where designated, on the SF-424 R&R Application for Federal Assistance.

If the AR has not received correspondence **from NIFA** regarding a submitted application within 30 days of the established deadline, contact the Agency Contact identified in Part VII of the applicable RFA and request the proposal number assigned to the application. **Failure to do so may result in the application not being considered for funding by the peer review panel. Once the application has been assigned a proposal number, this number should be cited on all future correspondence.**

D. Funding Restrictions

Section 7132 of the Food, Conservation, and Energy Act of 2008 (Pub. L. 110-246) amended section 1462(a) of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3310(a)) on recovery of indirect costs. The recovery of indirect costs on awards made by NIFA under this program may not exceed the lesser of the institution's official negotiated indirect cost rate or the equivalent of 30 percent of total Federal funds awarded.

If your institution does not have, or cannot obtain, a negotiated rate, you must calculate an indirect cost rate in order to request indirect costs. You should calculate an indirect cost rate based on actual costs for the entire organization from the most recently completed accounting year. If no prior cost history exists, you should use budgeted costs for the entire organization. You should follow the example(s) found at:
http://nifa.usda.gov/business/indirect_cost_process.html for information regarding this process.

You may elect not to charge indirect costs and, instead, use all grant funds for direct costs. If indirect costs are not charged, the phrase "None requested" should be written in this space."

Funds made available for grants under the AFRI program shall not be used for the construction of a new building or facility or the acquisition, expansion, remodeling, or alteration of an existing building or facility (including site grading and improvement, and architect fees).

E. Other Submission Requirements

You should follow the submission requirements noted in Part IV, section 1.9 in the document entitled "NIFA Grants.gov Application Guide."

For information about the **status of a submitted application**, see Part III., section 6. of the NIFA Grants.gov Application Guide.

PART V—APPLICATION REVIEW REQUIREMENTS

A. General

We evaluate each application in a 2-part process. First, we screen each application to ensure that it meets the administrative requirements as set forth in this RFA. Second, a technical review panel will evaluate applications that meet the administrative requirements.

We select reviewers based upon their training and experience in relevant scientific, extension, or education fields, taking into account the following factors: (a) The level of relevant formal scientific, technical education, or extension experience of the individual, as well as the extent to which an individual is engaged in relevant research, education, or extension activities; (b) the need to include as reviewers experts from various areas of specialization within relevant scientific, education, or extension fields; (c) the need to include as reviewers other experts (e.g., producers, range or forest managers/operators, and consumers) who can assess relevance of the applications to targeted audiences and to program needs; (d) the need to include as reviewers experts from a variety of organizational types (e.g., colleges, universities, industry, state and federal agencies, and private profit and non-profit organizations) and geographic locations; (e) the need to maintain a balanced composition of reviewers with regard to minority and female representation and an equitable age distribution; and (f) the need to include reviewers who can judge the effective usefulness of each application to producers and the general public.

When each peer review panel has completed its deliberations, the responsible program staff of Water for Agriculture Challenge Area will recommend that the project: (a) be approved for support from currently available funds or (b) be declined due to insufficient funds or unfavorable review.

Water for Agriculture Challenge Area reserves the right to negotiate with the PD/PI and/or with the submitting organization or institution regarding project revisions (e.g., reductions in the scope of work, funding level, period, or method of support) prior to recommending any project for funding.

B. Evaluation Criteria

Projects supported under this program shall be designed, among other things, to accomplish one or more of the purposes of agriculture research, education, and extension, subject to the varying conditions and needs of States. Therefore, in carrying out its review, the peer review panel will take into account the following factors.

1. Integrated Project Applications
These evaluation criteria will be used for the review of all multi-function Integrated Project applications.

a. Merit of the Application for Science Research, Education, and/or Extension
   1. Project objectives and outcomes are clearly described, adequate, and appropriate. All project components (i.e., research, education, extension) – at least two are required – are reflected in one or more project objectives;
   2. Proposed approach, procedures, or methodologies are innovative, original, clearly described, suitable, and feasible;
   3. Expected results or outcomes are clearly stated, measurable, and achievable within the allotted time frame;
   4. Proposed research fills knowledge gaps that are critical to the development of practices and programs to address the stated problem or issue;
   5. Proposed extension leads to measurable, documented changes in learning, actions, or conditions in an identified audience or stakeholder group; and
   6. Proposed education (teaching) has an impact upon and advances the quality of food and agricultural sciences by strengthening institutional capacities and curricula to meet clearly delineated needs and train the next generation of scientists and educators.

b. Qualifications of Project Personnel, Adequacy of Facilities, and Project Management

   1. Roles of key personnel are clearly defined;
   2. Key personnel have sufficient expertise to complete the proposed project, and where appropriate, partnerships with other disciplines (e.g., social science or economics) and institutions are established;
   3. Evidence of institutional capacity and competence in the proposed area of work is provided;
   4. Support personnel, facilities, and instrumentation are sufficient;
   5. A clear plan is articulated for project management, including time allocated for attainment of objectives and delivery of products, maintenance of partnerships and collaborations, and a strategy to enhance communication, data sharing, and reporting among members of the project team; and
   6. The budget clearly allocates sufficient resources to carry out a set of research, education (teaching), and/or extension activities that will lead to desired outcomes, with no more than two-thirds of the budget focused on a single project component. Supporting funds for Community of Practice core functions and project-specific activities are included for partnerships with eXtension.

c. Project Relevance
   1. Documentation that the project is directed toward specific Program Area Priority identified in this RFA and is designed to accelerate progress toward the productivity and economic, environmental, and social sustainability of U.S. agriculture with respect to natural resources and the environment, human health and well-being, and communities;
   2. Project components (research, education, and/or extension) – at least two are required – are fully integrated and necessary to address the problem or issue;
   3. The proposed work addresses identified stakeholder needs;
   4. Stakeholder involvement in project development, implementation, and evaluation is demonstrated, where appropriate;

5. Plan and methods for evaluating success of project activities and documenting potential impact against measurable short and mid-term outcomes are suitable and feasible;
6. For extension or education (teaching) activities, curricula and related products will sustain education or extension functions beyond the life of the project; and
7. For extension or education (teaching) activities, the resulting curricula or products share information and recommendations based on knowledge and conclusions from a broad range of research initiatives.

d. Center of Excellence Status

All eligible applicants will be competitively peer reviewed (as described in Part V, A. and B. of this RFA), and ranked in accordance with the evaluation criteria. Those that rank highly meritorious and requested to be considered as a center of excellence will be further evaluated by the peer panel to determine whether they have met the standards to be centers of excellence (Part III D. and Part IV C.). In instances where they are found to be equally meritorious with the application of a non-center of excellence, based on peer review, selection for funding will be weighed in favor of applicants meeting the center of excellence criteria. NIFA will effectively use the center of excellence prioritization as a "tie breaker". Applicants that rank highly meritorious but who did not request consideration as a center of excellence or who are not deemed to have met the centers of excellence standards may still receive funding .

In addition, the applicant's Notice of Award will reflect that, for the particular grant program, the applicant meets all of the requirements of a center of excellence. Entities recognized as centers of excellence will maintain that distinction for the duration of their period of performance or as identified in the terms and conditions of that award.

e. Conference Grant Applications
1. Relevance of the proposed conference to agriculture and food systems in the U.S. and appropriateness of the conference in fostering scientific exchange;
2. Qualifications of the organizing committee and appropriateness of invited speakers to topic areas being covered; and
3. Uniqueness, timeliness of the conference, and appropriateness of budget requests.

e. New Investigator Grant Applications
Refer to the review criteria listed above for the applicable Project Type (Research or Integrated) to which you are applying.

f. Sabbatical Grant, Equipment Grant, and Seed Grant Applications
1. The merit of the proposed activities or equipment as a means of enhancing the capabilities and competitiveness of the applicant and/or institution;
2. The applicant's previous experience and background along with the appropriateness of the proposed activities or equipment for the goals proposed; and
3. Relevance of the project to long-range improvements in and sustainability of U.S. agriculture, the environment, human health and well-being, and rural communities.

C. Conflicts of Interest and Confidentiality

During the peer evaluation process, we take extreme care to prevent any actual or perceived conflicts of interest that may impact review or evaluation. For the purpose of determining conflicts of interest, we determine the academic and administrative autonomy of an institution by reference to the current Higher Education Directory, published by Higher Education Publications, Inc., 1801 Robert Fulton Drive, Suite 555, Reston, VA, 20191. Phone: (888) 349-7715. Web site: http://www.hepinc.com.

Names of submitting institutions and individuals, as well as application content and peer evaluations, are kept confidential, except to those involved in the review process, to the extent permitted by law. In addition, the identities of peer reviewers will remain confidential throughout the entire review process, to the extent permitted by law; therefore, the names of the reviewers will not be released to applicants.

D. Organizational Management Information

Specific management information relating to an applicant shall be submitted on a one time basis, with updates on an as needed basis. This requirement is part of the responsibility determination prior to the award of a grant identified under this RFA, if such information has not been provided previously under this or another NIFA program. We will provide you copies of forms recommended for use in fulfilling these requirements as part of the preaward process. Although an applicant may be eligible based on its status as one of these entities, there are factors that may exclude an applicant from receiving federal financial and nonfinancial assistance and benefits under this program (e.g., debarment or suspension of an individual involved or a determination that an applicant is not responsible based on submitted organizational management information).

E. Application Disposition

An application may be withdrawn at any time before a final funding decision is made regarding the application; however, withdrawn applications normally will not be returned. One copy of each application that is not selected for funding, including those that are withdrawn, will be retained by Water for Agriculture Challenge Area for a period of three years.

PART VI—AWARD ADMINISTRATION

A. General

Within the limit of funds available for such purpose, the NIFA awarding official shall make grants to those responsible, eligible applicants whose applications are judged most meritorious under the procedures set forth in this RFA. The date specified by the NIFA awarding official as the effective date of the grant shall be no later than September 30 of the federal fiscal year in which the project is approved for support and funds are appropriated for such purpose, unless otherwise permitted by law. The project need not be initiated on the grant effective date, but as soon thereafter as practical so that project goals may be attained within the funded project period. All funds granted by NIFA under this RFA may be used only for the purpose for which they are granted in accordance with the approved application and budget, regulations, terms and conditions of the award, applicable federal cost principles, USDA assistance regulations, and NIFA General Awards Administration Provisions at 7 CFR part 3430, subparts A through E.

B. Award Notice

The award document will provide pertinent instructions and information including, at a minimum:

(1) Legal name and address of performing organization or institution to which the director has issued an award under the terms of this request for applications;

(2) Title of project;

(3) Name(s) and institution(s) of PDs chosen to direct and control approved activities;

(4) Identifying award number and the Federal Agency Identification Number assigned by NIFA;

(5) Project period, specifying the amount of time NIFA intends to support the project without requiring recompetition for funds;

(6) Total amount of financial assistance approved for the award;

(7) Legal authority(ies) under which the award is issued;

(8) Appropriate Catalog of Federal Domestic Assistance (CFDA) number;

(9) Applicable award terms and conditions (see http://www.nifa.usda.gov/business/awards/awardterms.html to view NIFA award terms and conditions);

(10) Approved budget plan for categorizing allocable project funds to accomplish the stated purpose of the award; and

(11) Other information or provisions deemed necessary by NIFA to carry out its respective awarding activities or to accomplish the purpose of a particular award.

C. Administrative and National Policy Requirements

Several federal statutes and regulations apply to grant applications considered for review and to project grants awarded under this program. These include, but are not limited to the ones listed below.

2 CFR Part 200 – Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

2 CFR Part 400 —USDA implementation of 2 CFR Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

2 CFR Part 415 – USDA General Program Administrative Regulations.

7 CFR Part 1, subpart A—USDA implementation of the Freedom of Information Act.

7 CFR Part 3—USDA implementation of OMB Circular No. A-129 regarding debt collection.

7 CFR Part 15, subpart A—USDA implementation of Title VI of the Civil Rights Act of 1964, as amended.

2 CFR Part 180 and Part 417--OMB Guidelines to Agencies on Government-Wide Debarment and Suspension (Nonprocurement) and USDA Nonprocurement Debarment and Suspension.

7 CFR Part 331 and 9 CFR Part 121—USDA implementation of the Agricultural Bioterrorism Protection Act of 2002.

2 CFR Part 416—USDA General Program Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments.

2 CFR Part 418—USDA implementation of Restrictions on Lobbying. Imposes prohibitions and requirements for disclosure and certification related to lobbying on recipients of federal contracts, grants, cooperative agreements, and loans.

2 CFR Part 421—USDA Implementation of Governmentwide Requirements for Drug-Free Workplace (Grants).

2 CFR Part 422—Research Institutions Conducting USDA-Funded Extramural Research; Research Misconduct.

7 CFR Part 3407—USDA procedures to implement the National Environmental Policy Act of 1969, as amended.

7 CFR 3430—Competitive and Noncompetitive Non-formula Financial Assistance Programs--General Award Administrative Provisions.

29 U.S.C. 794 (section 504, Rehabilitation Act of 1973) and 7 CFR Part 15b (USDA implementation of statute) —prohibiting discrimination based upon physical or mental handicap in federally-assisted programs.

35 U.S.C. 200 et seq. —Bayh Dole Act, controlling allocation of rights to inventions made by employees of small business firms and domestic nonprofit organizations, including universities, in federally-assisted programs (implementing regulations are contained in 37 CFR Part 401).

44 U.S.C. 3541 et seq. (Pub. L. 107-347) - Federal Information System Security Management Act of 2002 (FISMA), to improve computer and network security within the Federal Government. Applies to awardees if it will collect, store, process, transmit, or use information on behalf of NIFA.

D. Expected Program Outputs and Reporting Requirements

Grantees are to use REEport, NIFA's electronic, web-based inventory system to submit an initial project initiation which documents expected products and outcomes of the project. Additionally, annual progress report documenting realized project outcomes must be submitted to the electronic system. The web-based system facilitates an electronic workflow between grantees and NIFA for project accomplishments to be easily searchable and allows for public access to information on Federally-funded projects. The details of these reporting requirements, including those specific to the annual and final technical reports, are included in the award terms and conditions.

If a project is funded, beginning in the first year of funding, the PD will be required to attend annual investigator meetings (excluding Conference, Sabbatical, and Equipment Grant applications). Seed Grant applications are required to attend beginning in the second year of funding. Reasonable travel expenses should be included as part of the project budget.

PART VII—AGENCY CONTACT

Applicants and other interested parties are encouraged to contact:

Programmatic Contact –

Dr. James P. Dobrowolski
Title: National Program Leader
Unit: Division of Environmental Systems
Location: 3130 Waterfront Center
Phone: (202) 401-5016
Fax: (202) 401-1706
Email: jdobrowolski@nifa.usda.gov

Administrative/Business Contact –

Rochelle McCrea
Title: Team Leader, Team I
Unit: Branch II
Location: 2160 Waterfront Centre
Full Address and Directions
Phone: (202) 401 - 2880
Fax: (202) 401 - 6271
Email: rmccrea@nifa.usda.gov

Sondra Watkins
Title: Team Leader, Team II
Unit: Branch I
Location: 2170 Waterfront Centre
Full Address and Directions
Phone: (202) 401 - 4249
Fax: (202) 401 - 3237
Email: swatkins@nifa.usda.gov

PART VIII—OTHER INFORMATION

A. Access to Review Information

We will send copies of reviews, not including the identity of reviewers, and a summary of the panel comments to the applicant PD after the review process has been completed.

B. Use of Funds; Changes

1. <u>Delegation of Fiscal Responsibility</u>

Unless the terms and conditions of the award state otherwise, awardees may not in whole or in part delegate or transfer to another person, institution, or organization the responsibility for use or expenditure of award funds.

2. <u>Changes in Project Plans</u>

a. The permissible changes by the awardee, PD(s), or other key project personnel in the approved project shall be limited to changes in methodology, techniques, or other similar aspects of the project to expedite achievement of the project's approved goals. If the awardee or the PD(s) is uncertain as to whether a change complies with this provision, the question must be referred to the Authorized Departmental Officer (ADO) for a final determination. The ADO is the signatory of the award document, not the program contact.

b. The awardee must request, and the ADO must approve in writing, all changes in approved goals or objectives prior to effecting such changes. In no event shall requests be approved for changes that are outside the scope of the original approved project.

c. The awardee must request, and the ADO must approve in writing, all changes in approved project leadership or the replacement or reassignment of other key project personnel, prior to effecting such changes.

d. The awardee must request, and the ADO must approve in writing, all transfers of actual performance of the substantive programmatic work in whole or in part and provisions for payment of funds, whether or not federal funds are involved, prior to instituting such transfers, unless prescribed otherwise in the terms and conditions of the award.

e. The project period may be extended without additional financial support, for such additional period(s) necessary to complete or fulfill the purposes of an approved project, but in no case shall the total project period exceed any applicable statutory limit or expiring appropriation limitation. The terms and conditions of award include information about no-cost extensions of the award and when ADO's prior approval is necessary.

f. Changes in Approved Budget: Unless stated otherwise in the terms and conditions of award, changes in an approved budget must be requested by the awardee and approved in writing by the

ADO prior to instituting such changes, if the revision will involve transfers or expenditures of amounts requiring prior approval as set forth in the applicable Federal cost principles, Departmental regulations, or award.

C. Confidential Aspects of Applications and Awards

When an application results in an award, it becomes a part of the record of NIFA transactions, available to the public upon specific request. Information that the Secretary determines to be of a confidential, privileged, or proprietary nature will be held in confidence to the extent permitted by law. Therefore, any information that the applicant wishes to have considered as confidential, privileged, or proprietary should be clearly marked within the application. The original copy of an application that does not result in an award will be retained by the Agency for a period of three years. Other copies will be destroyed. Such an application will be released only with the consent of the applicant or to the extent required by law. An application may be withdrawn at any time prior to the final action thereon.

D. Regulatory Information

For the reasons set forth in the final Rule related Notice to 7 CFR part 3015, subpart V (48 FR 29114, June 24, 1983), this program is excluded from the scope of the Executive Order 12372 which requires intergovernmental consultation with State and local officials. Under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 35), the collection of information requirements contained in this Notice have been approved under OMB Document No. 0524-0039.

E. Definitions

Please refer to [7 CFR 3430, Competitive and Noncompetitive Non-formula Grant Programs-- General Grant Administrative Provisions](#) for the applicable definitions for this NIFA Grant Program.

For the purpose of this program, the following additional definitions are applicable:

Director means the Director of the National Institute of Food and Agriculture (NIFA) and any other officer or employee of NIFA to whom the authority involved is delegated.

Food and Agricultural Science Enhancement (FASE) Grants mean funding awarded to eligible applicants to strengthen science capabilities of Project Directors, to help institutions develop competitive scientific programs, and to attract new scientists into careers in high-priority areas of National need in agriculture, food, and environmental sciences. FASE awards may apply to any of the three agricultural knowledge components (i.e., research, education, and extension). FASE awards include Pre- and Postdoctoral Fellowships, New Investigator grants, and Strengthening grants.

Integrated project means a project incorporating two or three functions of the agricultural knowledge system (research, education, and extension) around a problem or activity.

Limited institutional success means institutions that are not among the most successful universities and colleges for receiving Federal funds for science and engineering research. A list of successful institutions will be provided in the RFA.

Minority-serving institution means an accredited academic institution whose enrollment of a single minority or a combination of minorities exceeds fifty percent of the total enrollment, including graduate and undergraduate and full- and part-time students. An institution in this instance is an organization that is independently accredited as determined by reference to the current version of the Higher Education Directory, published by Higher Education Publications, Inc., 6400 Arlington Boulevard, Suite 648, Falls Church, Virginia 22042.

Minority means Alaskan Native, American Indian, Asian-American, African-American, Hispanic American, Native Hawaiian, or Pacific Islander. The Secretary will determine on a case-by-case basis whether additional groups qualify under this definition, either at the Secretary's initiative, or in response to a written request with supporting explanation.

Multidisciplinary project means a project on which investigators from two or more disciplines collaborate to address a common problem. These collaborations, where appropriate, may integrate the biological, physical, chemical, or social sciences.

Partnership requires that all partners have a substantial involvement in the project throughout the life of the project. If a partnership between multiple entities is proposed, the proposal should clearly identify the following:
1) A narrative of each entity's clearly established role in the project;
2) How each entity involved as a partner on the project will contribute to execution of project objectives, determination of experimental design, development of the project work plan and time table, and submission of collaborative, timely reports; and
3) A comprehensive project budget that reflects each entity's financial or in-kind contribution to the total project budget costs.

Small and mid-sized institutions are academic institutions with a current total enrollment of 17,500 or less including graduate and undergraduate and full- and part-time students. An institution, in this instance, is an organization that possesses a significant degree of autonomy. Significant degree of autonomy is defined by being independently accredited as determined by reference to the current version of the *Higher Education Directory*, published by Higher Education Publications, Inc., 6400 Arlington Boulevard, Suite 648, Falls Church, Virginia 22042 (703-532-2300).

Strengthening Grants mean funds awarded to institutions eligible for FASE Grants to enhance institutional capacity, with the goal of leading to future funding in the project area, as well as strengthening the competitiveness of the investigator's research, education, and/or extension

activities. Strengthening grants consist of Standard and Coordinated Agricultural Project Grant types as well as Seed Grants, Equipment Grants, and Sabbatical Grants.

USDA EPSCoR States (Experimental Program to Stimulate Competitive Research) means States which have been less successful in receiving funding from AFRI, having a funding level no higher than the 38th percentile of all States based on a 3-year average of AFRI funding levels, excluding FASE Strengthening funds granted to state agricultural experiment stations and degree-granting institutions in EPSCoR States and small, mid-sized, and minority-serving degree-granting institutions. The most recent list of USDA EPSCoR States is provided in this RFA.

F. Materials Available on the Internet

AFRI program information will be made available on the NIFA web site at www.nifa.usda.gov/funding/afri/afri.html. The following are among the materials available on the web page:
1. More information about upcoming AFRI 2015
2. Stakeholder Input
3. Requests for Applications
4. AFRI Abstracts of Funded Projects
5. AFRI Annual Reports

TABLE 1. Most Successful Universities and Colleges Receiving Federal Funds*.
Use to Determine Eligibility for Strengthening Grants

Arizona State University (all campuses)	Princeton University	University Maryland, College Park
Baylor College of Medicine	Purdue University (all campuses)	University Massachusetts, Amherst
Boston University	Rutgers, The State University New Jersey (all campuses)	University Massachusetts, Worcester
Brown University	Scripps Research Institute, The	University Miami
California Institute of Technology	Stanford University	University Miami (all campuses)
Carnegie Mellon University	State University of New York, Stony Brook (main campus)	University Minnesota (all campuses)
Case Western Reserve University	Texas A&M University (main campus)	University Missouri, Columbia
Colorado State University	Tufts University	University New Mexico (all campuses)
Columbia University	University Alabama, Birmingham	University North Carolina, Chapel Hill
Consortium for Ocean Leadership	University Alaska, Fairbanks	University of Medicine & Dentistry New Jersey
Cornell University (all campuses)	University Arizona	University Pennsylvania
Dartmouth College	University California, Berkeley	University Pittsburgh (all campuses)
Duke University	University California, Davis	University Rochester
Emory University	University California, Irvine	University South Florida
Florida State University	University California, Los Angeles	University Southern California
George Washington University, The	University California, San Diego	University Texas, Austin
Georgia Institute of Technology (all campuses)	University California, San Francisco	University Texas Health Science Center, Houston
Harvard University	University California, Santa Barbara	University Texas Health Science Center, San Antonio
Indiana University - Purdue University, Indianapolis	University Chicago	University Texas M. D. Anderson Cancer Center
Iowa State University	University Cincinnati (all campuses)	University Texas Medical Branch
Johns Hopkins University, The	University Colorado (all campuses)	University Texas Southwestern Medical Center
Louisiana State University (all campuses)	University Connecticut (all campuses)	University Utah
Massachusetts Institute of Technology	University Corporation for Atmospheric Research	University Virginia (main campus)
Medical College, Wisconsin	University Delaware	University Washington
Medical University, South Carolina	University Florida	University Wisconsin, Madison
Miami State University	University Georgia	Vanderbilt University
Mount Sinai School of Medicine	University Hawaii, Manoa	Virginia Commonwealth University
New York University	University Illinois, Chicago	Virginia Polytechnic Institute and State University
North Carolina State University	University Illinois, Urbana-Champaign	Wake Forest University

Northwestern University	University Iowa	Washington University, St. Louis
Ohio State University (all campuses)	University Kansas (all campuses)	Woods Hole Oceanographic Institution
Oregon Health & Science University	University Kentucky (all campuses)	Yale University
Oregon State University	University Maryland, Baltimore	Yeshiva University
Pennsylvania State University (all campuses)		

***Data obtained from the table of Federal obligations for science and engineering research and development to the 100 universities and colleges receiving the largest amounts, ranked by total amount received in FY 2009 of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (National Science Foundation). Campuses that are part of a larger university system as listed in Table 1 may petition for an exemption to this rule (see Part III, B for information).

TABLE 2. Lowest One Third of Universities and Colleges Receiving Federal Funds*.
Use to Determine Eligibility for Possible Waiver of Matching Funds Requirement for Equipment Grants

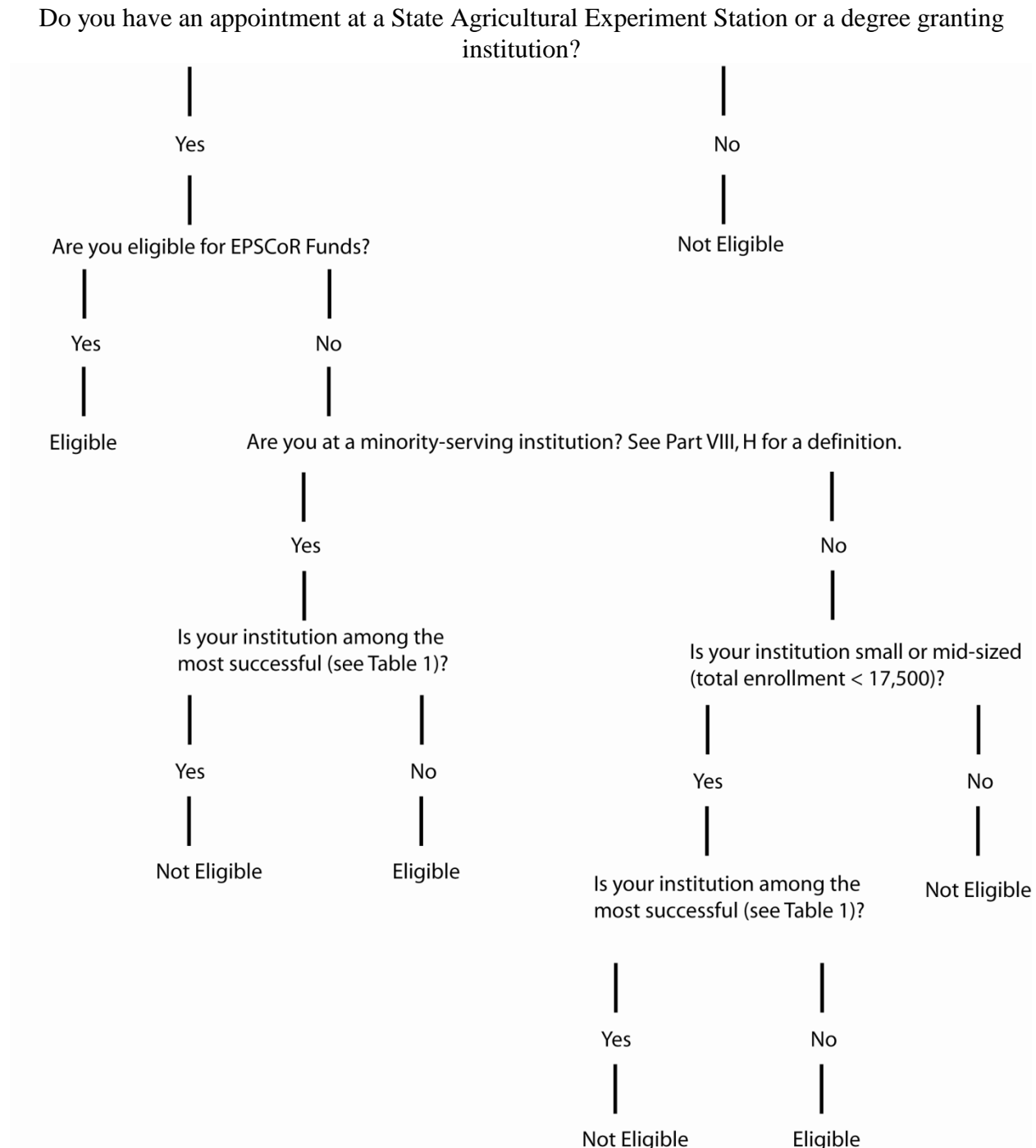|		
A. T. Still University of Health Sciences	Hendrix College	Regis University
Abilene Christian University	HI Pacific University	Rhodes College
Agnes Scott College	Highline Community College	RI College
AK Pacific University	Hinds Community College	Ridgewater College
Albright College	Hood College	Roanoke College
Allegheny College	Houston Community College	Rocky Mountain College
American Indian Higher Ed. Consortium	Hudson Valley Community College	Rollins College
American University Puerto Rico	IL College of Optometry	Roosevelt University
Angelo State University	IL Wesleyan University	Saginaw Valley State University
Anne Arundel Community College	Immaculata University	Saint Augustine's College
Antioch University all campuses	IN University-Purdue University Ft. Wayne	Saint Cloud State University
AR Tech University	IN Wesleyan University	Saint Edward's University
Arapahoe Community College	Independent College Fund	Saint Lawrence University
Arizona Western College	Indian River State College	Saint Mary's College (Notre Dame, IN)
Arrowhead Community Colleges	Institute of American Indian and Alaska Native Culture and Arts Development	Saint Mary's College CA
Art Ctr. College of Design	Iona College	Saint Mary's College MD
Assumption College	Ithaca College	Saint Mary's University (San Antonio, TX)
Atlanta Metropolitan College	Ivy Tech Community College IN all campuses	Saint Mary's University MN
Atlantic College	John Brown University	Saint Michael's College
Augusta State University	John Carroll University	Saint Norbert College
Augustana College (Rock Island, IL)	Johnson & Wales University (Providence, RI)	Saint Vincent Catholic Medical Ctrs. NY
Augustana College (Sioux Falls, SD)	Juniata College	Saint Vincent College
Austin College	Kalamazoo College	Salem State University
Austin Community College	Kansas City KS Community College	Salisbury University
Avila University	Kansas City University of Medicine and Biosciences	Salve Regina University
Babson College	Kean University	San Diego Mesa College
Baker University	Keene State College	Sarah Lawrence College
Baltimore City Community College	Kenyon College	SC Sea Grant Consortium
Bard College	Knox College	Seattle Community Colleges all campuses
Bard College at Simon's Rock	Kutztown University PA	Seattle Pacific University
Bay Mills Community College	LA Universities Marine Consortium	Seminole State College
Beaufort County Community College	Lake Forest College	Seminole State College FL
Beloit College	Lake Superior State University	Shawnee State University
Benedictine University	Lakeshore Technical College	Simmons College
Bennett College	Landmark College	Skagit Valley College
Bennington College	Laramie County Community College	Slippery Rock University PA

Bentley University	Lasell College	Sojourner-Douglass College
Bethany College (Bethany, WV)	Le Moyne College	South Mountain Community College
Bethune-Cookman University	Lebanon Valley College	Southeast MO State University
Birmingham-Southern College	Lee College	Southeastern OK State University
Bismarck State College	Lehigh Carbon Community College	Southern CT State University
Bowie State University	LeMoyne-Owen College	Southern Polytechnic State University
Bridgewater State University	LeTourneau University	Southern UT University
Butler County Community College (Butler, PA)	Lewis-Clark State College	Southwest FL College
Butler University	Lock Haven University PA	Southwestern Assemblies of God University
Butte College	Longwood University	Southwestern College (Chula Vista, CA)
Cabrini College	Loras College	Southwestern Indian Polytechnic Institute
Calhoun Community College	Los Rios Community College District (all campuses)	Southwestern OK State University
Canisius College	Lyndon State College	Springfield College (Springfield, MA)
Capitol College	Lyon College	Springfield Technical Community College
Carl Albert State College	MA College of Liberal Arts	State University of New York College Old Westbury
Carroll College	Manhattan College	State University of New York College Oswego
Carroll University	Mansfield University PA	State University of New York College Potsdam
Central Arizona College	Marietta College	State University of New York Empire State College
Central College	Marist College	State University of New York Farmingdale
Central Community College	Martin University	State University of New York Fredonia
Central CT State University	Mary Baldwin College	State University of New York Institute of Technology Utica-Rome
Central OR Community College	Marygrove College	State University of New York New Paltz
Centre College	Maryville University Saint Louis	State University of New York Purchase College
Chadron State College	McNeese State University	Stevenson University
Chestnut Hill College	Mercyhurst College	Stonehill College
Christian Brothers University	Mesa State College	Suffolk University
Clarion University PA all campuses	Mesabi Range Community and Technical College	Susquehanna University
Clark State Community College	Metropolitan State College Denver	Sweet Briar College
CO College	Middle TN School of Anesthesia	Taylor University
CO State University all campuses	Mid-South Community College	Thiel College
Cochise College	Midwestern State University	Tohono O'odham Community College
Coe College	Midwestern University (Chicago, IL)	Tri-College University
College of Lake County	Millersville University PA	Troy University main campus
College of Saint Benedict	Millsaps College	Truckee Meadows Community College
College of Saint Elizabeth	Milwaukee School of Engineering	TX A&M University-Texarkana
College of Saint Scholastica	Misericordia University	TX College
College of the Atlantic	Mohave Community College	TX Wesleyan University

College Southern NV	Monmouth College	Tyler Jr. College
College Wooster	Montgomery County Community College	Union Graduate College
Columbia College (Columbia, MO)	Mountain State University	University AK System of Higher Ed.
Columbia College (Columbia, SC)	MS University for Women	University AR Monticello
Columbia College of Nursing	MT State University Billings	University Central MO
Columbus State University	MT Tech College of Technology	University Charleston
Commonwealth Medical College,The	MT University System all campuses	University Consortium for Geographic Information Science
Concord University	Mt. Saint Mary's University	University Dallas
Concordia College (Moorhead, MN)	Muhlenberg College	University Evansville
CUNY Bronx Community College	Nashville State Community College	University Hartford
CUNY Kingsborough Community College	National College of Natural Medicine	University Houston Clear Lake
Cuyahoga Community College all campuses	National-Louis University	University IL Springfield
Dakota State University	NE Indian Community College	University Indianapolis
Del Mar College	Neumann University	University Mary Washington
Dickinson State University	New England School of Acupuncture	University MD Ctr. for Environmental Science
Doane College	Nicholls State University	University MD University College
Dominican University	North GA College & State University	University ME Augusta
Drury University	North IA Area Community College	University NE Kearney
East Stroudsburg University PA	Northampton Community College	University North AL
Eastern Arizona College	Northeast Community College	University of Saint Mary
Eastern IL University	Northeast TX Community College	University of the Incarnate Word
Eastern Mennonite University	Northern MI University	University of the South
Eastern OR University	Northern WY Community College District	University Phoenix
Eastern University	Northwest FL State College	University PR, Cayey
East-West University	Northwest MO State University	University Puget Sound
Eckerd College	Northwestern Health Sciences University	University Redlands
Edison State College	Northwestern MI College	University Rio Grande
Edward Via College of Osteopathic Medicine	Northwestern OK State University	University Sagrado Corazón
El Camino College Compton Ctr.	Northwestern State University	University Tampa
Elgin Community College	NY Institute of Technology all campuses	University West GA
Elon University	NY Law School	University WI-Parkside
Emerson College	Ocean County College	University WI-River Falls
Emporia State University	OH Northern University	University WI-Whitewater
Essex County College	OH Wesleyan University	UniversityS. Naval Academy
Fairleigh Dickinson University all campuses	Orangeburg-Calhoun Technical College	VA Military Institute
Fayetteville Technical Community College	Otterbein University	Valdosta State University
Ferrum College	PA College of Technology	Victoria College
Fitchburg State University	Pace University all campuses	Viterbo University
FL State College Jacksonville	Pacific Lutheran University	VT Technical College
Florence-Darlington Technical College	Pacific States University	Wabash College
Fox Valley Technical College	Paine College	Warren Wilson College

Francis Marion University	Palau Community College	Washburn University
Franciscan University Steubenville	Pasadena City College	Washington and Lee University
Fresno City College	Pearl River Community College	Washington State Community College
Ft. Hays State University	Peninsula College	Waukesha County Technical College
Ft. Lewis College	Pepperdine University Malibu	Weber State University
GA Southwestern State University	Philadelphia College of Osteopathic Medicine	Western Carolina University
Gadsden State Community College	Philadelphia University	Western New England College
Gainesville State College	Philander Smith College	Western University of Health Sciences
Galveston College	Pikes Peak Community College	Westfield State College
Gateway Technical College	Pitzer College	Westminster College (New Wilmington, PA)
Gettysburg College	Plymouth State University	Westmont College
Gonzaga University	Polk State College	Wheaton College (Norton, MA)
Gordon College (Wenham, MA)	Portland Community College	Wheaton College (Wheaton, IL)
Goucher College	Presbyterian College	White Earth Tribal and Community College
Grand View University	Prescott College	Widener University all campuses
Greenville Technical College	Providence College	Wiley College
Hamilton College (Clinton, NY)	Quinsigamond Community College	William Carey University
Hamline University	Radford University	Winona State University
Haywood Community College	Red Rocks Community College	Wofford College
Heartland Community College	Reed College	Worcester State University

FIGURE 1. Flow Chart for Strengthening Grant Eligibility.

Do you have an appointment at a State Agricultural Experiment Station or a degree granting institution?

Yes	No
Are you eligible for EPSCoR Funds?	Not Eligible

Yes — Eligible

No — Are you at a minority-serving institution? See Part VIII, H for a definition.

Yes — Is your institution among the most successful (see Table 1)?

- Yes — Not Eligible
- No — Eligible

No — Is your institution small or mid-sized (total enrollment < 17,500)?

- Yes — Is your institution among the most successful (see Table 1)?
  - Yes — Not Eligible
  - No — Eligible
- No — Not Eligible

APPENDIX A USEPA Human Subjects Research

EPA HUMAN SUBJECTS RESEARCH STATEMENT (HSRS)

Human subjects research supported by the EPA is governed by EPA Regulation 40 CFR Part 26 (Protection of Human Subjects). This includes the Common Rule at subpart A and prohibitions and additional protections for pregnant women and fetuses, nursing women, and children at subparts B, C, and D. While retaining the same notation, subparts B, C, and D are substantively different in 40 CFR 26 than in the more commonly cited 45 CFR 46. Particularly noteworthy is that research meeting the regulatory definition of intentional exposure research found in subpart B is prohibited by that subpart in pregnant women, nursing women, and children. EPA Policy Order 1000.17 Change A1 further clarifies this definition to include any intervention that manipulates their environment (i.e. modifies subjects' exposure). Research meeting the regulatory definition of observational research (any research that is not intentional exposure research) found in subparts C and D is subject to the additional protections found in those subparts for pregnant women and fetuses (subpart C) and children (subpart D). These subparts also differ markedly from the language in 45 CFR 46. For more information, please see: http://www.epa.gov/osa/phre/project.htm.

Procedures for the review and oversight of human research subject to 40 CFR Part 26 are also provided in EPA Order 1000.17 Change A1 (http://www.epa.gov/phre/pdf/epa-order-1000_17-a1.pdf). These include review of projects for EPA-supported human research by the EPA Human Subjects Research Review Official (HSRRO). EPA Order 1000.17 Change A1 requires preliminary approval by the HSRRO of all proposed EPA-supported human research before the agreement can be entered into. Additional requirements must be met and final approval received from the HSRRO before the research can begin. When reviewing human observational exposure studies, EPA Order 1000.17 Change A1 requires the HSRRO to apply the principles described in the SEAOES document (http://www.epa.gov/nerl/sots/SEAOES_doc20080707.pdf) and grant approval only to studies that adhere to those principles.

All applications submitted under this solicitation must include a HSRS as described below. Please use the definitions below to determine whether the proposed research involves human subjects, and then prepare a HSRS as explained below in the "HSRS Requirements" section.

Definitions (from 40 CFR Part 26 Subparts A, B, and C) to determine the involvement of human subjects in proposed research:

- "Human subject" means a living individual about whom an investigator (whether professional or student) conducting research obtains (1) data through intervention or interaction with the individual, or (2) identifiable private information.
- "Intervention" includes both physical procedures by which data are gathered and manipulations of the subject or the subject's environment that are performed for research purposes.
- "Interaction" includes communication or interpersonal contact between investigator and subject.

- "Private information" includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record).
- "Individually identifiable" means the identity of the subject is or may readily be ascertained by the investigator or associated with the information.
- "Research involving the intentional exposure of a human subject" means a study of a substance in which the exposure to the substance experienced by a human subject participating in the study would not have occurred but for the human subject's participation in the study. In addition, EPA Policy 1000.17 Change A1 requires the HSRRO to conceptualize intentional exposure research quite broadly:

(l) Research that includes the gathering of physiological measurements (e.g. monitoring a subject's cardio respiratory performance) or the collection of body fluids, tissue or expired air from subjects; or (2) Research that requires subjects to perform specific tasks other than their normal activities or manipulates their environment (e.g., modifies their exposure); or (3) Research that gathers or records private information (as defined in 40 CFR 26.102 (f)(2)) in a manner that associates such information with an identifiable subject.

"Observational research" means any human research that does not meet the definition of research involving intentional exposure of a human subject. Please note that surveys, interviews, and focus groups with individuals may constitute human subjects research. Additional information is available at: http://www.epa.gov/osainter/phre/support.htm

Human Subjects Research Statement (HSRS) Requirements

If the proposed research **does not** involve human subjects as defined above, provide the following statement in your application package as your HSRS: "The proposed research does not involve human subjects." Applicants should provide a clear justification about how the proposed research does not meet the definition (for example, all samples come from deceased individuals OR samples are purchased from a commercial source and provided without identifiers, etc.).

If the proposed research **does** involve human subjects, then include in your application package a HSRS that addresses each applicable section listed below, referencing the specific location of the information in the Research Plan, providing the information in the HSRS, or explaining why the section does not apply to the proposed research. (Not all will apply.) Please use the definitions provided above to ensure consistency in the interpretation of terminology. Do not exceed four consecutively numbered, 8.5x11-inch pages of single-spaced, standard 12-point type with 1-inch margins.

NOTE: Before EPA approves any research involving human subjects, the requirements of the regulations at 40 CFR Part 26 must be met. Also, before EPA approves human observational exposure research, EPA will examine it to ensure consistency with the SEAOES Principles. The federal Office for Human Research Protections requires that federally funded human subjects research only be conducted at facilities covered by a Federalwide Assurance (FWA). An FWA is

a document that designates the Institutional Review Board that will review and oversee the research, specifies the ethical principles under which the research will be conducted, and names the individuals who will be responsible for the proper conduct of the research. The factors below are not intended to be exhaustive of all those needed for the HSRRO to provide the final approval necessary for research to be conducted, but provide a basis upon which the HSRRO may grant the conditional approval necessary for the funding process to begin.

Items 1 – 9 must be completed for all studies involving human subjects. For studies involving intentional exposures (i.e. increases, decreases, or otherwise modifies subjects' exposure), also complete Items 10 -14.

1. <u>Human Subjects involvement, characteristics, and design</u>: Describe the proposed involvement of human subjects in the work being proposed.
2. <u>Benefits of research/value to society</u>: Discuss the potential benefits of the research to the research participants and others, including the value of the knowledge to be gained by the research.
3. <u>Potential risks to subjects</u>: Describe the potential risks to human subjects (e.g., physical, psychological, financial, legal, or other) and assess their likelihood and seriousness to the human subjects.
4. <u>Protection against risks</u>: Describe planned procedures for protecting against or minimizing potential risks and assess their likely effectiveness.
5. <u>Protection of privacy and confidentiality</u>: Describe how data, specimens, and/or records will be collected, managed, and protected, including at collaborating sites, if any, as well as at the primary site.
6. <u>Protection of vulnerable groups</u>: Explain the rationale for inclusion of vulnerable populations and describe the additional protections in place, if any, for protecting vulnerable populations in the research.
7. <u>Risk/benefit relationship</u>: Justify how the risks are reasonable in relation to expected benefits.
8. <u>Informed Consent Process</u>: Describe planned procedures for the process of obtaining and maintaining informed consent. Include a description of the circumstances under which consent will be sought and obtained, who will seek it, the nature of the information to be provided to prospective subjects, and the method of documenting consent.
9. <u>Relationship between researcher and community</u>: If the research will take place in a community setting, describe the procedures in place for defining the community, obtaining its involvement in the research, and establishing and maintaining trust.

Items 10-14: Projects involving the intentional exposure (i.e. increases, decreases, or otherwise modifies subjects' exposure) of human subjects require additional justification. Note that intentional exposure of children, pregnant women or nursing women is prohibited, according to 40 CFR Part 26, subpart B. Please refer to the definition of "intentional exposure" described earlier in this section.

Please also note that projects involving intentional exposure of human subjects should only be considered if they have the potential of providing a clear health or environmental benefit or if

acquisition of such information is not obtainable by any other means. In no case should the exposure cause lasting harm to study participants.

Provide the following for intentional exposure studies:

10. <u>Justification for exposure</u>: Please provide the scientific background and rationale for the study design, subject selection, and value of the study to public health. Include any information about previous animal studies and (if available) human observational studies that justify the need for exposure research.
11. <u>Participant Selection and Informed Consent:</u> Describe how subjects will be recruited for the study and how both participant selection and the informed consent process described earlier conform to best practices in exposure research.
12. <u>Compensation for Research Participation</u>: Describe the amount of compensation being offered to participants, as well as the distribution plan, and justify these practices with respect to best practices in exposure research.
13. <u>Compensation for Research-Related Injury</u>: Discuss how you plan to ensure that participants receive needed medical care for injuries incurred in the study, without cost to the participants.
14. <u>Appropriate Review and Oversight:</u> Describe the constitution of the IRB that will review this research and defend its ability to consider whether the study (ies) has the potential of providing a clear health or environmental benefit to the community. In addition, describe the procedures for reporting adverse events or unanticipated problems to the IRB, as well as how these events will be analyzed with respect to risk to subjects.

The EPA HSRRO must also consider the following items to determine if the necessary conditions for scientifically and ethically acceptable intentional human dosing studies have been satisfied in order to approve intentional exposure research:

- prior animal studies and, if available, human observational studies;
- a demonstrated need for the knowledge to be obtained from intentional human dosing studies;
- justification and documentation of a research design and statistical analysis that are appropriate to address an important scientific question, including adequate power to detect appropriate effects;
- an acceptable balance of risks and benefits, and minimization of risks to participants;
- equitable selection of participants;
- free and informed consent of participants; and
- review by an appropriately constituted IRB.